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SOPT

Self-Instructional Package for Special Orientation Programme for Primary School Teachers

EXPERIMENTAL EDITION

SOPT

Self-Instructional Package for Special Orientation Programme for Primary School Teachers

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PUBLICATION TEAM

U. Prabhakar Rao, *Head*, Publication Division
R. S. Saxena *Chief Editor*
Y.P. Sharma *Assistant Editor*
R.N. Bhardwaj *Editorial Assistant*
Shiv Kumar *Production Officer*
Arun Chitkara *Assistant Production Officer*
Subodh Srivastava *Production Assistant*
D.K. Shinde *Senior Artist*

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Illustrated by
SHERBANI DAS GUPTA

OFFICES OF THE PUBLICATION DEPARTMENT, NCERT

NCERT Campus
Sri Aurobindo Marg
NEW DELHI 110016

CWC Campus
Chitlapakkam, Chromepet
MADRAS 600064

Navjivan Trust Building
P.O. Navjivan
AHMEDABAD 380014

CWC Campus
32, B.T. Road, Sukchar
24 PARGANAS 743179

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Foreword

The National Policy on Education (NPE 1986) (Revised in 1992) recognised the need and importance of in-service training and the Programme of Action of this Policy laid down explicitly the plan of action for providing regular in-service training of school teachers. The District Institutes of Education and Training (DIETs) have been established to fulfil this need in respect of the elementary education sector. Basic physical and human facilities to primary schools have also been provided by the Government of India through a centrally sponsored scheme called Operation Blackboard (OB) expecting that these inputs will improve the teaching-learning climate of the primary schools.

Towards implementing the above, a Programme of Mass Orientation of School Teachers (PMOST) got a stride after the formulation of the NPE 1986. The NCERT, in collaboration with the States, planned and organised this programme between 1986 and 1989 reaching 17.62 lakh teachers, a majority of them drawn from the primary schools. The programme was extended in 1990 to reorient the primary teachers, specifically to the use of materials supplied under the OB Scheme. Since the number of primary teachers is large and institutionalisation of in-service education is still taking roots, to meet this felt need, the programme has now been initiated under a scheme called Special Orientation Programme for Primary School Teachers (SOPT) from the year 1993-94 with a view to improving the quality of primary/elementary education as a part of the strategy of achieving Universalization of Elementary Education (UEE).

The main focus of this programme is implementing the Minimum Levels of Learning (MLLs) identified for the primary stage, and training in the use of OB materials provided to schools. The SOPT has been launched from the year 1993-94, and till 1996-97, it is expected to cover 4.5 lakh primary school teachers every year.

The instructional package has been developed for the SOPT to exemplify demonstrative, task and skill-oriented teaching-learning situations. It is expected that this package will reinforce confidence and competence in the teachers.

The present publication : *Self-Instructional Package for SOPT*, contains sixteen modules, Part I contains nine modules and Part II seven modules to generate awareness amongst teachers about the concerns of primary education. The Part II covers curricular areas of Classes I to V with a focus on performance effectiveness in the classroom.

This publication is an experimental edition and refinements will be made on the basis of feedback received from the teachers.

The NCERT has also developed educational television support along with this print material to make the SOPT more effective and purposeful. A gradual shift from sensitization of the teachers to develop specific subject competencies has been attempted through this package.

A programme of this size has involved a large number of primary school teachers, resource persons and key persons. The efforts of the governments of the States and Union Territory (UT) Administrations in planning, organising and coordinating this programme, in cooperation and collaboration with the NCERT, are significant. It is hoped that this package will be found useful by the teachers and will make the primary school education purposeful and joyful.

A.K. Sharma
Director
National Council of Educational
Research and Training

New Delhi

GANDHIJI'S TALISMAN

"I will give you a talisman. Whenever you are in doubt or when the self becomes too much with you, apply the following test :

Recall the face of the poorest and the weakest man whom you may have seen and ask yourself if the step you contemplate is going to be of any use to him. Will he gain anything by it ? Will it restore him to a control over his own life and destiny ? In other words, will it lead to Swaraj for the hungry and spiritually starving millions ?

Then you will find your doubts and your self melting away."

mkGandhi

Preface

Self–Instructional Package for SOPT Part I and II has been developed to provide in-service training to primary school teachers. This training programme has been launched from the year 1993-94 in the country on a massive scale with a physical target of covering 4.5 lakh primary school teachers each year.

Special Orientation Programme for Primary School Teachers to be known as 'SOPT' is a centrally sponsored scheme under the Ministry of Human Resource Development, Government of India. The National Council of Educational Research and Training (NCERT) has been entrusted with the responsibility to facilitate its conduct in the States and Union Territories. The major focus of the SOPT is :

(i) to provide competencies as envisaged in the Minimum Levels of Learning;

(ii) to develop competencies in the use of OB materials supplied to primary schools in the country under Operation Blackboard (OB) Scheme; and

(iii) to encourage teachers to adopt child-centred approach to learning.

Part I of the package contains modules which aim at creating 'awareness' among teachers about basic strategies and concerns incorporated in National Policy on Education, 1986 (Revised 1992) and Programme of Action (1992). The focus is on bringing about qualitative change in the teacher training programme at the primary stage. Part II contains modules in curricular areas viz., (i) Language, (ii) Mathematics; (iii) Environmental Studies I (Social Studies); (iv) Environmental Studies II (Science); (v) Art Education; (vi) Work Experience; (vii) Health and Physical Education.

The approach and format of this reading material has the following salient features:

(i) The style is interactive mode of presentation

(ii) Modules are self-instructional materials to be read by the teachers for induction purpose

(iii) The modules are activity-based and provide exemplars to situations and problems of a Teaching Unit

(iv) Inbuilt evaluation design has been incorporated to provide scope for self–propelled exercises.

A ***Training Manual for Special Orientation Programme for Primary School Teachers*** has also been prepared for use by the Course Directors and Resource Persons (Master Trainers, Key Persons, Resource Persons) in their training programme.

The teachers are expected to read this material and use it in the classroom as functional modules. The basic idea is that after having undergone training for a week, the teacher will be in a position to develop confidence and competency in dealing with curricular areas at the primary stage.

These are draft modules to be tried out in the field. After obtaining feedback from the field, it will be possible to improve the packages further. The Department of Teacher Education and Special Education will feel obliged if valuable comments from the users are provided for improving the quality of these modules.

The modules on Language Teaching (Hindi as mother tongue); Mathematics, Environmental Studies I and II were developed in a six-day workshop involving NIE and RCEs faculty and other experts working in the MLLs projects in the country. These were finally vetted by the NCERT faculty. The present publication is the final version. The

Department acknowledges the contribution of all who were involved in its development and vetting. Miss T.V.S.D. Bhawani, Mrs Mamta Kapoor, Miss Swati Vidyarthi, Dr Asha Sharma and Miss Shashi Prabha Rai, Junior Project Fellows, provided useful assistance. This project was initiated under the able guidance and leadership of Prof. N.K. Jangira, Ex-Head, Department of Teacher Education and Special Education. I express my gratitude to him.

I owe much to Prof. A.K. Sharma, Director and Prof. A.N. Maheshwari, Joint Director, NCERT who provided support at every stage to see this publication through. Our special thanks to Head, Publication Division and his colleagues who took extra pains in expediting the publication.

V.P. GARG
Reader and Programme Coordinator
Department of Teacher Education
and Special Education

New Delhi

Contents

FOREWORD iii
PREFACE v

PART I (AWARENESS PACKAGE)

Operation Blackboard Scheme DALJIT GUPTA 1

Minimum Levels of Learning: Concepts and Role of Primary School Teachers VED PRAKASH AND S.D. ROKA 6

Comprehensive and Continuous Evaluation at Primary Stage V.P. GARG 13

Developing School Readiness in Children: Guidelines and Activities VENITA KAUL 21

Creating a School Climate for Effective Teaching Learning R. MURALIDHARAN 28

Education of Special Groups SANDHYA PARANJPE 33

Role of Teachers in Girls' Education and Women's Empowerment USHA NAYAR, KIRAN DEVENDRA, JANAK DUGGAL, SUSHMA S. JAIRETH, RAJ RANI AND GAURI SRIVASTAVA 44

Value Education K.M. GUPTA 57

Multigrade Teaching B.R. GOYAL 68

PART II (PERFORMANCE PACKAGE)

Teaching of Language P.K. CHAKRAVORTY 79

Teaching of Mathematics : Concepts and Strategies V.P. GUPTA AND I.K. BANSAL 95

Teaching of Environmental Studies I (Social Studies) DALJIT GUPTA AND V.P. GARG 109

Teaching of Environmental Studies II (Science) SHUKLA BHATTACHARYA AND B.K. SHARMA 118

Art Education R.K. CHOPRA 139

Work Experience at Primary Level D.D. YADAV 152

Health and Physical Education P.A. CHAR 158

WRITERS AND VETTING PERSONS 167

SCIENCE RELATED VALUES

Curiosity, quest for knowledge, objectivity, honesty and truthfulness, courage to question, systematic reasoning, acceptance after proof/verification, open-mindedness, search for perfection and team spirit are some of the basic values related to science. The processes of science, which help in searching the truth about nature and its phenomena are characterised by these values. Science aims at explaining things and events. Therefore to learn and practise science :

- **Be inquisitive about things and events around you.**
- **Have the courage to question beliefs and practices.**
- **Ask 'what', 'how' and 'why' and find your answers by critically observing, experimenting, consulting, discussing and reasoning.**
- **Record honestly your observations and experimental results in your laboratory or outside it.**
- **Repeat experiments carefully and systematically if required, but do not manipulate your results under any circumstance.**
- **Be guided by facts, reasons and logic. Do not be biased in one way or the other.**
- **Aspire to make new discoveries and inventions by sustained and dedicated work.**

PART I

Awareness Package

Operation Blackboard Scheme

DALJIT GUPTA

Overview

Operation Blackboard (OB) is the symbolic name of the centrally sponsored scheme under which every existing primary school in the country has been/is being provided with minimum essential facilities *required for their* effective functioning. This scheme will also cover all the new primary schools to be opened in future.

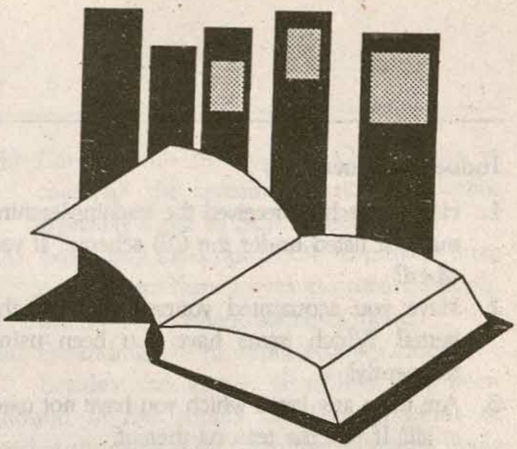
The OB scheme was initiated in 1987 as part of the implementation of the resolutions of National Policy on Education (NPE) 1986. All the existing primary schools in the country were targetted to be covered by the end of Seventh Five Year Plan but due to various factors the targets could not be achieved during that period. By March 1992, 4.14 lakh (77%) schools in 5385 (84%) Community Development Blocks and 1142 (29%) Municipal Areas had been covered under the scheme.

This module explains the factors responsible for launching the scheme, its major components as well as its unique features.

Objectives

On completion of the module, the teacher would be able to

- understand the concept of OB;
- understand the need for launching the scheme;
- appreciate the need to optimise the utilisation of each item provided to his/her school;
- plan activities for curricular transaction involving use of the various items and activities, participation of pupils;
- suggest items for inclusion in the essential item(s) list which is (are) more relevant to the learning needs of his/her pupils; and
- make efforts to develop additional materials for use as aids for transacting curricular activities.



Induction Questions

1. Has your school received the teaching-learning material listed under the OB scheme? If yes, when?
2. Have you acquainted yourself with all the items? Which items have you been using frequently?
3. Are there any items which you have not used at all? If yes, the reasons thereof.

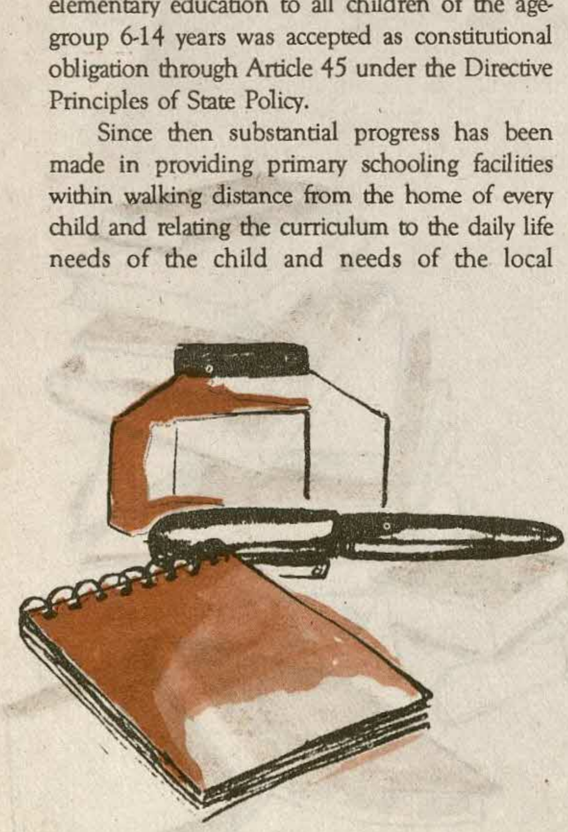
Need of the Scheme

Meeting the basic learning needs and enhancing the achievement level of primary school children is a global concern today. India is no exception to that. Rather, in our country efforts towards the achievement of this objective had started as early as early fifties when the Constitution of India was adopted and provision of universal elementary education to all children of the age-group 6-14 years was accepted as constitutional obligation through Article 45 under the Directive Principles of State Policy.

Since then substantial progress has been made in providing primary schooling facilities within walking distance from the home of every child and relating the curriculum to the daily life needs of the child and needs of the local community aiming at their social and economic upliftment. But the targets of keeping all enrolled children in school till they complete the age of 14 years and helping them to attain the identified standards have still been not achieved. Some of the major factors responsible for this state of affairs have been

- non-availability of adequate/suitable physical facilities including classrooms and other essential structure;
- non-availability of sufficient number of teachers in a large number of primary schools; and
- non-availability of essential teaching-learning material for teachers and children.

The rising concern about these factors as great hinderances in reducing the dropout rates and raising the achievement level of children led to the conception of the OB scheme which was included as a significant policy formulation in the NPE.

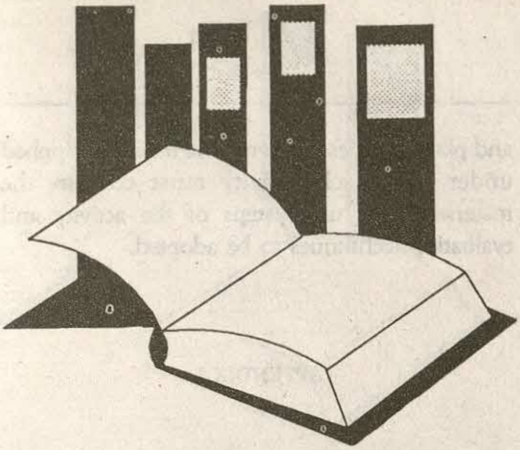


Components of the Scheme

The components of the scheme are:

(i) Provision of at least two reasonably large rooms that are usable in all weathers, with a deep verandah along with separate toilet facilities for boys and girls.
(ii) Provision of at least two teachers, as far as possible one of them a woman in every primary school.
(iii) Provision of essential teaching and learning material including blackboards, maps, charts, a small library, toys and games and some equipment for work experience.

The implementation of the scheme was reviewed by the Ministry of Human Resource Development, Government of India in 1991-92. Based on the review report, some modifications have been made in the scheme as well as the mode of its implementation. The modified scheme as given in the Programme of Action (POA) 1992 has the following sub-schemes:



(i) Continuation of on-going OB scheme to cover all the remaining primary schools, especially those in SC/ST areas.

(ii) Expanding the scope of OB to provide three teachers and three rooms to primary schools, wherever enrolment warrants them.

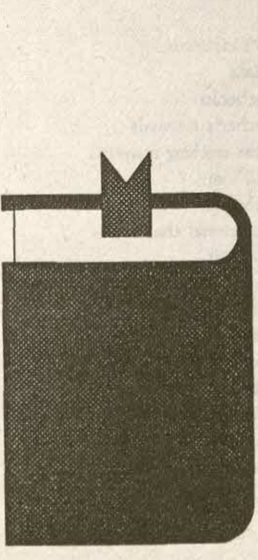
(iii) Expanding OB to upper primary schools.

Besides the above, flexibility has been allowed in the supply of essential items of teaching-learning material to the primary schools by different States/UTs. Some items have been made mandatory (List given in Appendix I) and have to be supplied to each school. For the remaining items the States/UTs have been given the freedom to select and supply only those that are suitable for their specific needs but the items must be selected from the list of items approved by the Parliament (List given in Appendix II) except in the case of musical instruments. The States can supply the musical instruments that are commonly used by the community in different areas.

Significant Features

The Operation Blackboard (OB) scheme has unique features that recommend well-defined steps for the improvement of facilities in a primary school aiming at making it a pleasant place for children and encouraging teachers to adopt child-centred, activity-based teaching-learning strategies. Some of the significant features are:

- It defines the concrete facilities, that are a must for any school to function effectively, in terms of building, teachers and teaching-learning material.
- The items identified as minimum aids for teaching-learning process take care of the requirements of the teachers and pupils for self-learning as well as teaching of various concepts in different subject areas included in the scheme of studies at primary stage.



- Norms and specifications of each supply item have been laid down in order to maintain the quality of each item. Thus, the scheme provides opportunities not only of equal access to education but also creating conditions for equal participation and attainment of comparable levels by all children.

Related Material Available

The following print and non-print material has been developed by the NCERT in the context of utilisation of the material supplied under the scheme. The material has been disseminated to all the States/UTs.

(a) Print Material

Programme of Mass Orientation of School Teachers (in the context of the scheme of operation blackboard)

(i) Awareness Package	(Vol. I)
(ii) Performance Package	(Vol. II)

(b) Non-Print Material

203 Colour slides

Video Films: 15 programmes consisting of

- 6 programmes on the use of mathematics kit
- 2 programmes on the use of primary science kit
- 1 programme on the use of mini tool kit
- 1 programme on art education
- 2 programmes on the use of library books
- 1 programme on playway method
- 1 programme on music, rhythm and movement
- 1 programme on creative and aesthetic development

Assignments/Exercises

List down five competencies in each subject area and plan activities involving the material supplied under OB. Each activity must contain the material to be used, steps of the activity and evaluation techniques to be adopted.

APPENDIX I

List of Mandatory Items

1. Teacher's equipment–syllabus, textbooks and teacher's guides
2. Maps
3. Educational charts
4. Reference books
5. Children's books (at least 200)
6. Blackboard
7. Chalk and duster
8. Mats and furniture for students and teachers
9. Games material

APPENDIX II

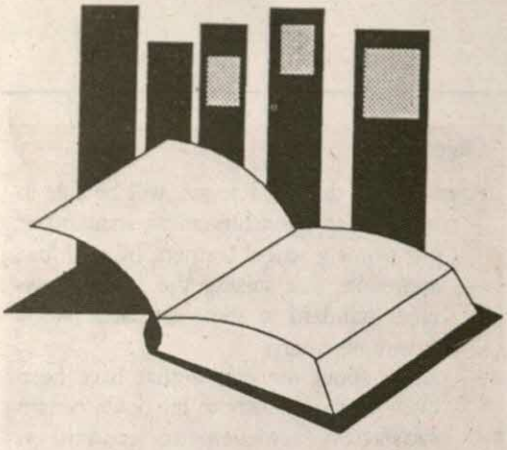
LIST OF ESSENTIAL TEACHING-LEARNING MATERIAL

(a) Teacher's materials
  1. Syllabi
  2. Textbooks
  3. Teacher's manuals

(b) Classroom teaching materials
  1. Wall maps
  2. Globe
  3. Educational charts

(c) Play materials
  1. Blocks, strips and tiles
  2. Jigsaw puzzles
  3. Games and toys

(d) Games equipment
  1. Skipping rope
  2. Balls – Rubber/Tennis, Throwball (Volleyball/Football)
  3. Swing rope with tyre



- 4. Airpump
- 5. Ring

(e) *Primary science kit*

(f) *Mini tool kit*

(g) *Mathematics kit*

(h) *Books for library*
  1. Reference books
  2. Children's books
  3. Magazines, journals and newspapers

(i) *Musical Instruments*
  1. Harmonium
  2. *Tabla/Dholak*
  3. *Manjira*

(j) *Classroom equipment*
  1. Chair and table, mats, boxes
  2. Blackboard
  3. Rollerboard
  4. Chalk
  5. Duster
  6. Trash can

Minimum Levels of Learning : Concepts and Role of Primary School Teachers

VED PRAKASH AND S. D. ROKA

Overview

The basic concern of this module is two-fold. Firstly, to help you realise the need for raising achievement standards of primary school learners. Secondly, to help you understand how to reorient your methodology of teaching so as to help all learners achieve satisfactory standards as laid down in the form of 'Minimum Levels of Learning'.

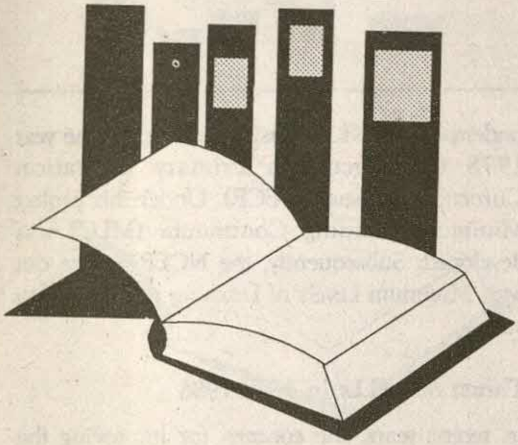
As you go through this module you will find that the achievement standards of primary school children, in general, are rather low all over the country. You will also get an idea about the need for laying down the minimum levels of learning below which no school should be allowed to fall. Minimum levels of learning have been stated in the form of competencies for Classes I-V in the curricular areas of language, mathematics and environmental studies. This module presents various concepts related to minimum levels of learning. It provides salient features of minimum levels of learning such as competency-based teaching, competency-based continuous and comprehensive evaluation, and learning at mastery level. It also provides some assignments to be completed by the teachers.

It is hoped that this module will help you achieve all the objectives.

Objectives

After reading this module you will be able to

- realise that the achievement standard of our primary school learners are very low;
- appreciate that raising the low achievement standard to some satisfactory level is very necessary;
- know about the efforts that have been made in the country to lay down certain satisfactory achievement standard at primary stage;
- know that the standards which have been laid down are generally known as Minimum Levels of Learning (MLLs) at primary stage;
- understand the meaning of MLLs;
- know that the MLLs have been stated in the form of competencies;
- familiarise yourself with all the competencies for the grades you are teaching in the areas of language, mathematics and environmental studies;
- understand that the competencies are the performance goals (provides direction) for the teachers and achievement criteria for the learners;
- understand that these competencies are to be acquired at mastery level by all the learners;
- realise that teaching-learning process is to be given orientation towards competency-based teaching;
- understand the significance of competency-based teaching-learning process and competency-based evaluation;
- realise that evaluation should be comprehensive and continuous;
- understand the role of entry level test in MLLs approach;
- understand the significance of remedial teaching in (MLLs) approach; and
- appreciate the need for assessing non-cognitive personality characteristics.



Introduction

There has always been a gap between what our majority of learners achieve and what is expected of them to achieve. Despite that investment of huge amount of money, time and efforts, our schools, in general, have not moved towards the goal of increased learning for all learners. Substantial achievements have been made with regard to providing primary schools/non-formal education centres within walking distance of the child and also increasing enrolment. But children achievement continue to reflect not only low levels of achievement but also achievement gaps amongst the children. These levels of achievement and achievement gaps which vary from school to school made it crystal clear that educational opportunity in terms of infrastructural facilities alone is not good enough to do the job. What is more important is the laying down of standards of learning (quality) which must be ensured to be achieved by all the learners (equity). This brings in the idea of 'quality coupled with equity' which means that each and every child should have access to education of a satisfactory quality.

In fact this idea of 'quality coupled with equity' underlies the attempt at laying down of Minimum Levels of Learning (MLLs), at primary stage.

Concern about Low-achievement Standard

As a teacher you know that students are expected to achieve certain predetermined standards of learning in each areas of school subject. With this end in view you may be working hard with your students so as to help them achieve the expected standards of learning. But very often you find that majority of your students do not reach the standards expected of them. In other words, the achievement of most of the students remain rather low.

Studies in this area have revealed that

achievement levels of majority of primary school children are very low. For example, in language it is reported that majority of the students cannot read/write correctly all the alphabets even at the end of Class III. Similarly they cannot read/ write correctly many familiar words or simple sentences. Listening and reading comprehension is also reported to be very poor. In the area of mathematics, students often cannot count, recognise or write correctly numbers from 1 to 100 even at the end of Class II. Achievement is pretty low in four basic arithmetical skills of addition, subtraction, multiplication and division even at the end of Class IV or V. These findings may,therefore, be very similar to your own experiences. The situation with regard to other higher level mathematical concepts are no better.

As a teacher you must be feeling concerned about the low level of achievement of your students. Infact parents, educational administrators and planners and knowledgeable members of the community are also concerned about low achievement of our primary school students. It also reflects the failures on the part of primary school system to help each and every learner develop his/her potential. The tremendous cost of this failure on the society on terms of human development can well be imagined.

Need for Raising Achievement Standard

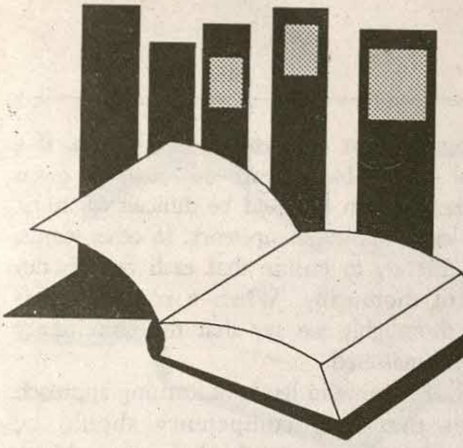
You will agree that there is an urgent need to raise the achievement level to certain predetermined satisfactory standard. This will contribute to improving the quality of primary education. To achieve this goal more efforts are required to be made.

However, certain efforts have been made at the national level to raise the standard of achievement. The Education Commission (1966) had emphasised the need for setting some standard for achievement and to ensure that no school remained below that standard. The NCERT in collaboration with the States undertook a UNICEF-assisted project in the year 1978 with focus on Primary Education Curriculum Renewal (PECR). Under this project Minimum Learning Continuum (MLC) was developed. Subsequently, the NCERT came out with Minimum Levels of Learning at the primary stage.

Thrust on MLLs in NPE 1986

In recent years, the concern for improving the quality of achievement of all students at the primary stage has been attracting attention of educational policy-makers and practitioners. In this context, the National Policy on Education, 1986 (NPE 1986) recommended that minimum levels of learning be laid down for each stage of school education and that steps be undertaken to ensure that students achieve these minimum levels of learning. The urgency for ensuring minimum levels of learning of all students has again been re-emphasised in the Revised Policy Formulation and Programme of Action 1992 (POA 1992).

As a follow-up of the directive of NPE 1986, a committee to lay down minimum levels of learning at the primary stage was set up in 1990 by the Ministry of Human Resource Development, Department of Education, Government of India. In 1991, this committee submitted its report entitled 'Minimum Levels of Learning at Primary Stage'. The report has laid down minimum levels of learning for Classes I-V in language, mathematics and environmental studies. The minimum levels for each subject has been stated in terms of competencies. These specified levels of learning set a standard which all students should achieve at the end of each grade. The school system has to ensure that all students achieve these levels of learning as they progress from Class I to V. This would help achieve the goal of increased learning for all learners, and, this would lead to improvement in quality of primary education.



Why Minimum Levels of Learning?

Laying down of minimum levels of learning is helpful for a teacher in the following ways:

1. It sets clear goals for the teacher and thus provides direction to his/her work. The effort of the teacher will now be directed at helping all the students achieve the competencies to reach the levels which have been laid down. Covering merely the syllabus or completing the content of the textbooks will not be the only aim of his/her teaching.

2. It helps the teacher choose appropriate teaching-learning strategy. It provides clarity about the choice of methodology and subject-matter to be used for developing the competencies.

3. It helps the teacher choose appropriate method of evaluating pupil achievement. It provides direction to the teacher so as to make him/her know about *what*, *when* and *how* to evaluate.

Meaning of Minimum Levels of Learning

The concept of Minimum Levels of Learning includes three aspects, namely 'minimum', 'levels' and 'learning'. Of them, the words 'minimum' and 'levels' are two qualifiers for learning. The word 'learning' means desirable and durable change in learner's knowledge, understanding, values, attitudes and motor skills. In educational context this learning takes place through curricular experiences in or outside the school premises. The word 'levels' refers to standards or levels of performance. In fact each level consists of a statement of competencies and every competency requires a particular learning which in turn becomes levels of learning. The word 'minimum' refers to quantum of competencies which ought to be acquired by each and every learner having undergone through a stipulated time-frame of learning. There is an important thing which one must know about 'minimum' and that is that 'minimum' is not necessarily optimum. This minimum does not mean that it sets the upper limit of learning for all children.

There will be children who can learn beyond the minimum levels specified in the report. Such fast learners should be encouraged to achieve more than what is contained in the MLLs report.

Meaning of Competency

Minimum levels of learning may be stated in a variety of ways. However, in the MLLs report these have been stated in the form of competencies.

In the context of MLLs, competencies are learning objectives. When a competency has been developed in a student he/she would be able to perform specific task related to that competency. For example, according to the language competency under writing skill for Class I, the student should be able to write simple familiar words and simple sentences. Again, in mathematics under the area 'understanding whole numbers and numerals', there is a competency for Class II, wherein the students should be able to state the place value of digits within a two digit numerals. Similarly, in environmental studies for Class III, there is a competency wherein the student should be able to interpret important road symbols.

You may familiarise yourself with the list of competency statements given in the 'Report on Minimum Levels of Learning at Primary Stage'.

Salient Features of MLLs Approach

Let us now examine some of the salient features of minimum levels of learning approach in teaching-learning process, namely 'Mastery Learning', 'Competency-based Teaching', and 'Competency-based Comprehensive and Continuous Evaluation'.

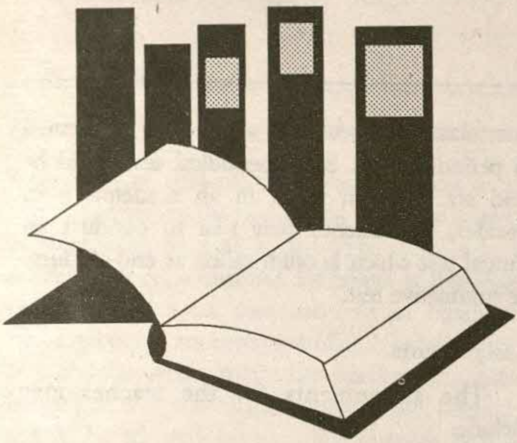
Mastery Learning

The competencies for each subject and for each grade have been arranged from simple to more complex. Each competency must be learnt thoroughly which then provides the basis for learning the next competency, and so on. If a student is not able to learn thoroughly a given competency, then it would be difficult for him/her to learn the next competency. In other words, it is necessary to ensure that each competency is learnt thoroughly. When a competency is learnt thoroughly we say that the competency has been mastered.

Thus, minimum levels of learning approach implies that each competency should be developed at the mastery level. In our context, mastery learning means that all the competencies or almost all the competencies are to be mastered by all the children or almost all the children. Suppose there are 20 competencies to be learnt by a group of 20 children in the class. If all these 20 competencies are thoroughly learnt by all the 20 children, we may say that these competencies have been fully mastered by the class. This is often expressed as 100×100. If 80 per cent of the competencies are mastered by 80 per cent of the children (80×80), this may also be considered as acceptable. However, there are certain competencies which must be mastered by all the learners. For example, 'recognises common letters of alphabet in combination and singly' (language), and 'recognises numerals and matches numbers to numerals from 1-100', (mathematics). Mastery learning is the key aspect of the MLLs approach. In day-to-day teaching-learning situation ensuring mastery of competencies by the learners is the target for the teacher. In the beginning one might face difficulties in achieving these targets fully, but gradually these difficulties can be overcome and ultimately it will help us produce learners with increased learning.

Competency-based Teaching

Development of the competencies until mastery level is the major concern in MLLs approach. For this purpose, a competency serves as a basis for selecting and arranging appropriate teaching-learning activities with a view to meeting learning



needs of learners. This calls for child-centred and activity-oriented competency-based teaching. In other words, teaching-learning activities have to be organised in such a manner so as to suit the needs of individual learner. As a teacher you should be clear about the competency/ competencies to be developed amongst your students. This will help you decide: (i) suitable content, (ii) appropriate teaching methodology, (iii) suitable teaching aid, (iv) appropriate evaluation techniques, and (v) necessary remedial measures for those facing learning difficulties.

Competency-based Continuous and Comprehensive Evaluation

The focus of minimum levels of learning approach is at the mastery of the competencies. In order to assess whether or not a learner has mastered the competencies, it is necessary to evaluate his/her achievement on regular basis. A learner can acquire the next competency only if he/she has mastered the earlier related competency. Therefore, it becomes necessary to adopt a scheme of evaluation which helps the teacher confirm regularly whether or not the competencies have been mastered by the learners. This means that the scheme of evaluation has to be continuous. As part of your teaching work, you evaluate achievement of your students from time to time. But very often the tests that are used for evaluating learners' achievement measure only knowledge of content. Not much attention is paid to evaluate achievement of competencies. It has also been observed that evaluation is done only in the cognitive areas of learning such as knowledge, understanding, and mental skills. Evaluation of non-cognitive areas of learning such as attitudes, personality, qualities, values, and psychomotor skills is seldomly carried out. The report on 'Minimum Levels of Learning at Primary Stage' has specified certain personality qualities which need to be developed in schools. Effective evaluation procedures need to be employed so as to measure both cognitive and non-cognitive learning outcomes. Such a procedure of evaluation which adequately measures both cognitive and non-cognitive learning outcomes is commonly known as comprehensive evaluation.

Evaluation is an integral part of teaching-learning process. Therefore, efforts should be made to integrate evaluation with the teaching-learning activities. The process of evaluation should start with pretesting. Pretesting should be carried out right in the beginning of the academic session. This will help you know whether or not the learners are prepared to acquire the related competencies to be developed in the new class. This will help you identify those children who are not ready to learn competencies of the new class. For them, you may have to organise suitable remedial programme.

For a teacher organising teaching-learning activities is a regular process in which learner's evaluation has also to move side by side. That is, evaluation has to be continuous. This continuity in evaluation has to be viewed in two ways. Firstly, the teacher while developing a competency simultaneously tries to assess the development of the competency amongst his/her learners. Secondly, the teacher may assess periodically the development of cluster of interrelated competencies which may be termed as periodical test. Such periodical test could be held six to seven times in an academic year. Besides, the teacher may like to conduct an annual test which is often called as end-of-course or summative test.

Assignments

The assignments for the teacher may include:

(i) Read and write all the competencies related to the curricular areas and classes that you are teaching.

(ii) In order to help your students achieve minimum levels of learning, what material support would you require?

(iii) Study the list of competencies for a given class and write if the load on the learner is less or more than what they are supposed to learn in the existing curriculum.

(iv) What strategy would you suggest to help you regularly in the implementation of MLLs approach after you complete the current training programme?

(v) List the competencies which students often find very difficult. What could be the causes for not mastering these competencies by most of the students?

Comprehensive and Continuous Evaluation at Primary Stage

V. P. GARG

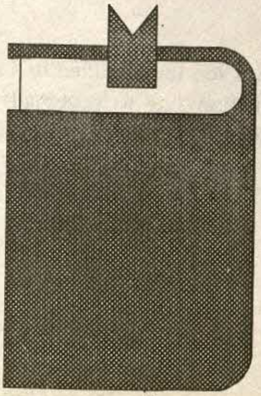
Overview

Evaluation of students in primary schools is to be of formative or developmental in nature instead of summative because at this stage child is in a formative stage of learning. Emphasis at this stage should not be on measurement of students' learning but on improvement of their achievement. If a child is weak in his/her studies, diagnostic evaluation and remediation for effective learning should be adopted by you. The purpose of this module is to provide you practical suggestions as how you can use the concept of Comprehensive Continuous Evaluation (CCE) at the primary stage.

Objectives

After going through this module, you will be able to know

- the concept of comprehensive continuous evaluation at the primary stage;
- the techniques of using the concept in different subjects;
- use diagnostic and remediation for effective learning; and
- nature of evaluation process either in summative form or formative or criterion-related judgements.



Approach of Teaching-learning at the Primary Stage

Emphasis on the following aspects of teaching-learning approach at the primary stage has been laid:

- Learner-centred (activity-based participatory role in classroom)
- Competency-based minimum levels of learning
- Use of OB material
- Continuous and comprehensive evaluation of learning experiences.

In learner-centred approach the child is exposed to

- posing problems
- asking questions
- collecting information
- finding solutions to problems
- answering to questions through his/her effort/activity.

At this stage, the teacher has to encourage the child's participation in the above process through activities. The whole process of teaching-learning is geared to the development of learner's creativity and thinking.

- Competency-based minimum learning has been already dealt with elsewhere here.
- Use of OB material supplied to your school is emphasised while you are teaching. Your class has to make relevant, effective and realistic effort. You can use your own immediate environment in addition to your OB material (Read the module on this aspect).

Now we deal with the concept, use and practice of comprehensive, continuous evaluation at the primary stage. The following are the three words in the concept:

1. Comprehensive
2. Continuous
3. Evaluation

Let us define first the last as it describes the object of this module.

Evaluation in short means

- information gathering
- information processing
- judgement forming
- decision-making

These above four components relate to the achievement/performance of a learner in his/her teaching-learning process under the given schooling conditions. As we have already pointed out that learning at the primary stage has to be evaluated on a formative/developmental pattern hence it is to be evaluated on a continuum, i.e. in a continuous and sequential integrated form. As you know it well that concepts are learnt in a hierarchical form which appear from simple to complex in sequential learning. For example, you teach the competency of recognising and writing numeral from I to 100 in Class I. The following competencies are involved:

1. Concept of numerals
2. Recognition of numerals
3. Writing of numerals
4. Sequential order of writing of these numerals

These four competencies are to be mastered in a sequential, graded and integrated form. Teaching in this sequential form has to be done and once this is done then *evaluation* has to be done so that you ensure that your pupils have mastered these four steps while gaining competency. This process of learning and evaluating the child's learning has to be *continuous.*

Comprehensive

Under the NPE, 1986 (as modified in 1992), the scheme of evaluation has to cover all learning experiences – curricular subjects and non-cognitive areas. Hence, evaluation in the scheme is comprehensive in character.

Contents of Teaching

Your contents of teaching cover all minimum levels of competencies as defined in the document *Minimum Levels of Learning at Primary Stage* (Report of the Committee, MHRD, 1991). This document has been published by the NCERT, New Delhi. It contains 8 chapters and you should read this document and understand the basics of the Minimum Levels of Learning.

Self-appraisal by Teachers after Reading MLL's Report

Answer the following questions after reading this document:

1. What are the four salient features of minimum levels of learning?
2. Name two MLLs competencies in each of the following curricular areas:
   (i) Language, (ii) Mathematics,
   (iii) Environmental Studies I and
   (iv) Environmental Studies II.
3. What are those four aspects to be highlighted in the development of the non-cognitive characteristics by the school? (Please refer pages 64-66 of the document.)
4. Name those values which have been highlighted in the NPE, 1986 and which have to be promoted. (Please refer page 62 of the Document)
5. Name the key qualities which have been recommended by the Committee on MLLs (MHRD) for contributing towards the values identified in the NPE, 1986.

Methodologies of CCE

As you are aware that a policy of automatic promotion (non-detention) is followed in all or initial classes of the primary education. But with this, a sound procedure of evaluation on continuous basis is to be followed. But evaluation aimed at content improvement of learning is either neglected or paid inadequate attention. As a result of which the weakness of basic skills of reading, writing and computation goes on accumulating. It has been recommended that formal examination at least in the first two classes of the primary stage should be avoided. But it is also necessary to devise 'oral mechanism' of evaluation for these two classes so that the children gain competencies of the basic skills which are expected to be mastered in these classes. The MLLs approach implies a calculated effort to include those minimum, essential and common competencies that all children must master.

Exemplars of Oral Mechanism

Oral questioning has all along been a part of the classroom activity. At this stage the teacher can use the following mechanism.

- Quiz contest
- Single question put to individuals in a group while lesson is being taught.

The following aspects in language could be tested through oral mechanism.

1. To speak with correct articulation and intonation.
2. To speak grammatically correct language
3. Vocabulary and its usage
4. Delivery (communication skills)

In non-language areas a quiz competition can be organised.

The techniques for oral examination are: (i) reading aloud picture story card; (ii) prepared questions; (iii) conversation on prepared topics; (iv) general conversation; (v) questions on pictures and role playing, etc.

Resource persons are requested to discuss the contents of this document with their trainees.

Activity for the Teacher

The teacher should prepare sample oral questions on cards of different varieties and depth such as:

– recall type	Objective type questions
– understanding	Very short-answer type
– application level	Expression type

Recall Type Stem: Green plants take their food from	*Objective Type Questions (Multiple Choice)* (a) Sunlight, water, carbondioxide (b) Oxygen and water (c) Water and carbondioxide (d) Oxygen
Understanding Type Stem: Circle the name of the organ that does not belong to the group	(a) Stomach, lung, intestine (b) Windpipe, lungs, liver, nostrils (c) Heart, nerves, blood vessels
Application Type *(Situation 1)* Why is the day in the desert hotter and the night cooler as compared to the plains?	Sand becomes hot quickly when the sun shines and also cools quickly when the night falls.
Expression Type *(Situation 2)* Compare the clothes worn by people in Kashmir to that of the people living in Kerala.	Kashmir has a cold climate hence people wear woolen clothes. Kerala is on coastal line, there is no major difference between summer and winter temperature.

Similarly, we can use such examples for written tests, i.e. class test, unit tests, terminal tests and other tests in different curricular areas.

Assessment Card of Comprehensive Evaluation

The policy of comprehensive continuous evaluation has to be implemented. Here, we give an assessment card of comprehensive evaluation which can be used for this purpose. You can record your marks, assessment grade as per your requirement in different areas. This card covers five broad areas for assessment. Understand this card, use it and give your suggestions to improve it with illustrations.

Organising Remedial Measures

- (i) Self learning
- (ii) Group teaching
- (iii) Peer learning
- (iv) Individual help by teachers
- (v) Help by guardians
- (vi) Assignment and its regular correction, etc.

Proforma

Continuous Comprehensive Evaluation

S. No.	*Areas*	*Mode of Evaluation*	*Responsibility*
1	2	3	4
1.	Physical health cumulative records	As per medical check-up	(i) Physical education teacher (ii) Class teacher
2.	Scholastic areas	(i) Oral (ii) Written (iii) Practicals	Subject teachers
3.	Organising non-cognitive activities A. At school B. On the playground C. At places like play-ground D. Workshop room SUPW/work experience E. Social service, etc.	(i) Observation (ii) Degree of participation by a student (iii) Winning of awards, etc. (iv) Recording of evidences when participated	Activity teachers
4.	Interest	(i) Observation (ii) Recording of evidences on participation profile by activity/level/rank	(i) Class teacher (ii) Counsellor (iii) Activity teacher (iv) Classmates
5.	Attitudes	(i) Observation (ii) Rating scale	(i) Teacher(s) (ii) Counsellor

O = Outstanding A = Excellent B = Very Good C = Good D = Average E = Poor

Suggested readings

Exercise for Teachers

I. Identify the physical disability of your pupils. Make a list of their physical disability as per this format.

Name of the Pupil	*Boy/Girl*	*Nature of Physical disability*	*What steps have you taken to help the pupil?*

II. Discuss with your colleagues how you have handled these children:

- Talented/Gifted
- Children with physical disability
- Weak students (in studies)
- Weak students (physical health)

III. How have you assessed your pupils?

		Mode of Assessment	
1. Curricular Areas	Oral	Written	By observations/ Activity
2. Co-curricular Areas:			
(i) Games and Sports			
(ii) Work Experience			
(iii) Art Education			
(iv) Library Activity			

IV. Give your arguments in favour of or against evaluation system as a separate school activity.

V. List five competencies in the following areas of your pupils which have been found to be weak-spots by you.

Areas Subjects	*Deficiency or competency (As per MLLs Format)*	*Class*

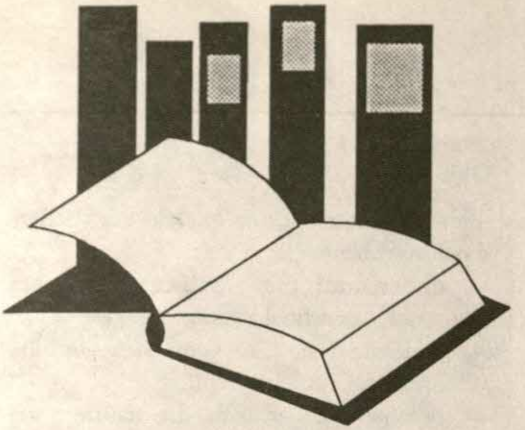
Suggested Readings

NCERT, *Minimum Levels of Learning at Primary Stage.* Report of the Committee set up by the MHRD, (Department, of Education, GOI) New Delhi, 1991.

Pritam Singh and Shourie, J.P. *Criterion Referenced Testing:A Monograph,* National Council of Educational Research and Training. New Delhi, 1983.

Srivastva, H.S. *Comprehensive Evaluation in Schools,* National Council of Educational Research and Training, New Delhi, 1989.

State Council of Educational Research and Training (U.P.) A *Report on Pre-project Activity (Measurement and Evaluation),* Department of Psychology and Guidance (Bureau of Psychology), Allahabad, 1992.



Developing School Readiness in Children : Guidelines and Activities

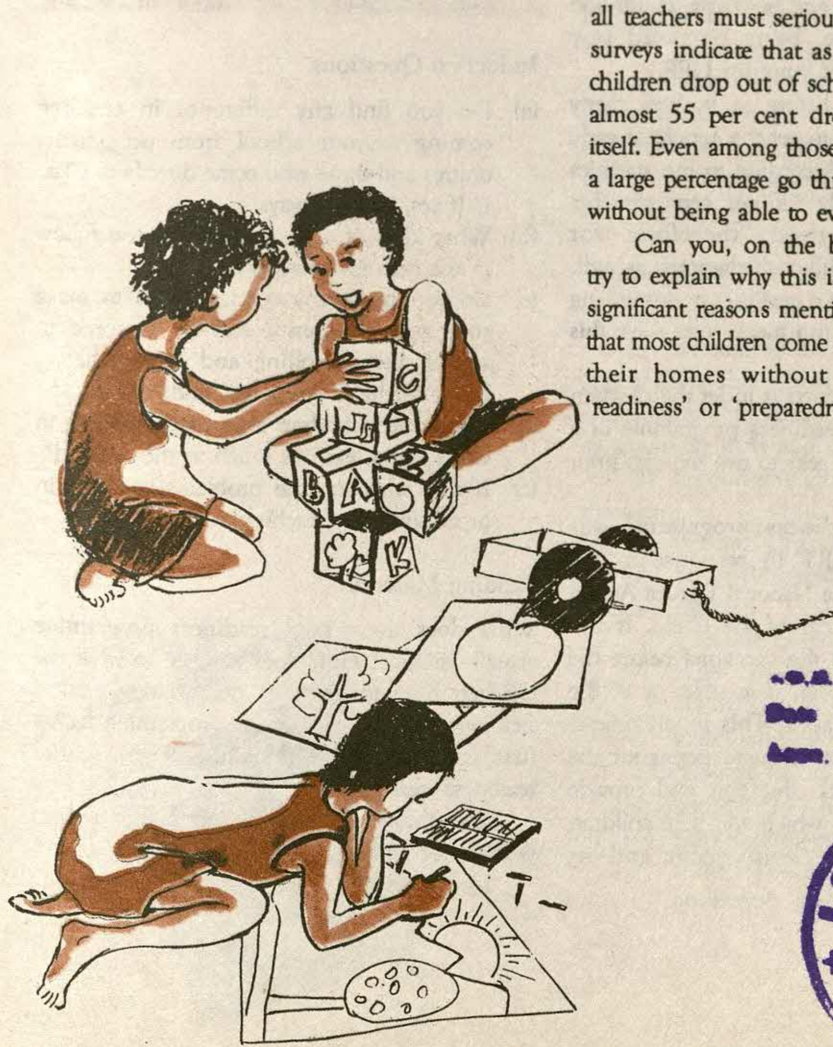
VENITA KAUL

Introduction

As you must be aware, universalisation of elementary education (UEE) is today a national priority. When one talks of UEE, this does not only mean bringing all children into the elementary schools and retaining them there. It also means being able to ensure that all children who go through primary school attain certain minimum levels of learning.

But, let us look at the existing situation in schools. Even if children are coming into school, are they really staying on? And if they are staying on, are they really learning? These are questions all teachers must seriously consider. Studies and surveys indicate that as many as 50 per cent of children drop out of school by Class V of which almost 55 per cent drop out in the first year itself. Even among those who continue in school a large percentage go through the primary grades without being able to even read or write.

Can you, on the basis of your experience, try to explain why this is happening? One of the significant reasons mentioned for this situation is that most children come into Class I straight from their homes without having the necessary 'readiness' or 'preparedness' for schooling. As a



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result, they are not able to adjust to the school environment and demands of the school curriculum and many,therefore, drop out even in the first year. Those children who continue fail to achieve the academic skills expected from them, due to a weak foundation.

On the contrary, researches have also shown that those children who come into Class I after attending an early childhood education programme, be it an *anganwadi*, *balwadi* or a nursery school, show much better rates of retention in the primary grades and also demonstrate higher levels of learning, particularly in the early primary grades. Early childhood education is, therefore, being promoted very seriously as a significant input for UEE.

But the question before us is, how many children are really able to get the benefit of early childhood education? According to the statistics available approximately 15 per cent get this benefit. There is need, therefore, for universalising early childhood education as well. But until that becomes a reality, can something not be done as an interim measure to solve this problem?

The measure suggested is to let the children go through a school readiness programme of a duration of about six weeks to two months prior to Class I.

This school readiness programme was devised by the NCERT in response to the recommendations of the National Plan of Action in the International Year of the Child. It can be conducted either in the vacations before the start of the academic year, if feasible, or in the first few months of Class I. This programme is expected to compensate to some extent for the lack of early childhood education and provide the necessary readiness which will help children adjust to the school environment and its demands.

Objectives

After completion of this module the teacher should be able to

- understand the significance of the concept of school readiness;
- understand the main components of this concept;
- become familiar with the nature and organisation of the kind of environment and play activities which promote school readiness; and
- ascertain the child's readiness, both social and academic, for the school curriculum.

Induction Questions

(a) Do you find any difference in children coming to your school from pre-primary centres and those who come directly to Class I? If yes, in what ways?

(b) What kind of a programme do you follow in the first few months of Class I?

(c) Do you make any special efforts to make sure that children continue to come to school after enrolling and learn what is being taught? If yes, what kinds of efforts?

(d) Do you feel children enjoy your teaching in Class I and learn as much as they should?

(c) If not, what are the problems you face in organising your teaching?

Reading Material

What does the school readiness programme actually include? How does it relate to what the children have to learn in the primary grades? Before we get on the actual programme let us first consider, what does the term 'school readiness' really mean?

By 'school readiness' we mean that a child is ready for school in terms of

(i) personal-social readiness

(ii) psychomotor readiness

(iii) academic readiness

Let us take up each aspect separately.

Personal-social Readiness

If we consider personal-social readiness in actual behavioural terms, we can say that this means developing in the child:

(a) a sense of security in the school environment, away from home;

(b) good personal habits of regularly and punctually coming to school, coming neat and clean everyday, being able to sit in a place for some time and attend to the school activities, etc.

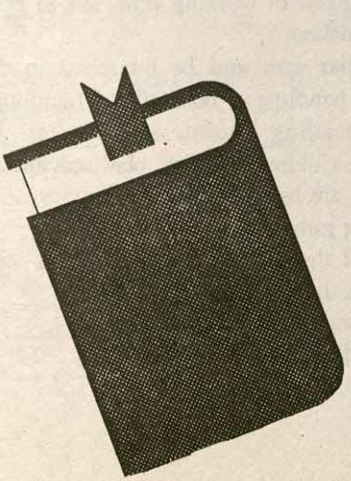
(c) social habits of sharing, cooperating with other children, participating willingly and enthusiastically in group activities, waiting for one's turn, respecting others' rights and property, and so on.

Personal-social readiness as spelt out can be developed in children by

(i) welcoming the child warmly to school and making the school programme interesting and attractive so that the child wants to come to school regularly and punctually; and

(ii) encouraging good personal, social habits through:

- personal cleanliness check-ups
- story-telling and conversation
- rhymes
- a balance of individual, small group and large group activities to gradually encourage children to be able to effectively function in a group as required in the school situation;
- encouraging children to wait for their turn in activities like snack distribution, distribution of other material, asking/answering questions or narrating an



event, entering/leaving the classroom, etc.
- opportunity for free play and dramatic play with the help of OB material, e.g. blocks, strips, tiles, puzzles, dolls and movement toys.

Psychomotor Readiness

This aspect of readiness means developing in the child:

(a) adequate eye-hand coordination to be able to handle writing/drawing material in a well-coordinated way;

(b) adequate coordination of the larger muscles and a sense of balance to be able to effectively take part in sports, games and physical education later.

For psychomotor development activities like the following would be useful:

Fine Muscle Development

- Manipulative play with blocks, tiles, strips, jigsaw puzzles supplied under Operation Blackboard.
- Sorting of environmental/locally available material eg. seeds, leaves etc.and creative activities like drawing, colouring, tearing, pasting, cutting, clay work, etc.
- Dramatisation with finger puppets.

Large Muscle Development

- Activities involving large muscle skills like jumping, running, hopping, walking, balancing, climbing, skipping, etc.

Academic Readiness

The third type of readiness, i.e. academic readiness would include readiness to learn the 3 R's, i.e.

- Reading
- Writing
- Arithmetic (Number work)

The Skill of Reading

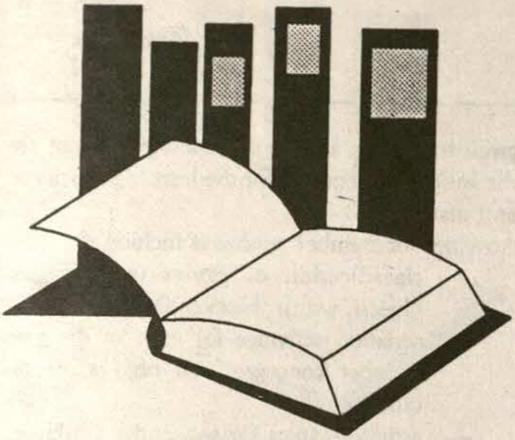
Let us consider 'reading readiness' first. What exactly are the skills necessary to be able to 'read'? To be able to read a child must be able to identify the script/alphabet (in other words–differentiate between shapes and formations) and also distinguish between the different sounds of the alphabets. Not only that, the child must also be able to relate each sound with the appropriate alphabet. A child must also have a fair vocabulary in the standard language to facilitate his reading and make whatever he reads comprehensible to him. The child must also be familiar with the use of books and have an interest in developing the skill of reading.

Keeping these essentials in mind, reading readiness would mean developing in the child the ability to

- discriminate sounds—particularly the beginning and the end sounds – of words (sound discrimination);
- discriminate different shapes and patterns (visual discrimination);
- relate sounds with pictures/objects/shapes (auditory visual association);
- have an appropriate vocabulary in the standard language (vocabulary development);
- get the habit of working from left to right (directionality);
- be familiar with and be interested in the use and handling of books (book handling).

These reading readiness skills can be developed in children through play activities, a few of which are listed below:

(a) Listening games, e.g.
   (i) Find those objects whose names, start with the sound 'Ka'
(b) Visual discrimination activities, e.g.
   (i) Find the odd-man-out



(i) Find out the odd man out

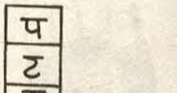
□ □ △

फ फ क ब व ब

(iii) Letter / Alphabet dominoes

| प | क |
| क | प |

(iii) Puzzles



(ii) Letter/Alphabet dominoes
(iii) Puzzles

(c) Auditory visual association

Activities, e.g.

(i) Find the pictures of objects starting with a particular sound

(ii) Make strips ot pictures of objects. Each strip can have four pictures. Of these, three should have the same beginning sound. The fourth should be similar but not identical. Ask each child to identify the one that is different.

(d) Directionality

This is developed through letting children handle picture books supplied under OB to which they are attracted. They should also be encouraged to keep to the direction of left to right while doing any activity.

(e) Vocabulary development can be facilitated through

- Stories
- Songs
- Word games
- Conversation activity (in various ways)
- Dramatisation
- Free dramatic play, etc.

The Skill of Writing

It involves well-coordinated and controlled movements of the fingers while holding and using the pen/pencil and good eye-hand coordination. The writing of any script would also require the ability to differentiate between different shapes of alphabets as well as the habit of working from left to right.

Writing Readiness : It involves the development of all the abilities/skills in children before starting them on formal writing. These skills include:

(a) Eye-hand coordination
(b) Finger muscle coordination and control

(c) Directionality

(d) Visual discrimination (letter perception)

To develop writing readiness in children fun activities with crayons and chalk can be given and gradually they should be brought on to the use of pencil. These fun activities can be like

- Joining dots
- Tracing shapes
- Copying of forms
- Pattern making
- Colouring in enclosed spaces

Readiness for Number Work

It requires the child to form some basic concepts and related vocabulary. These concepts are known as 'pre-number concepts'. It also requires in the child the capacity to use some essential cognitive skills like skills of classification, seriation, sequential thinking and problem-solving.

The pre-number concepts and vocabulary that must be clear to the child before he is introduced to 'number' are related to measurement, e.g.

I. (i) big/small (related to size)
   (ii) long/short (related to length)
   (iii) fat/thin (related to fatness)
   (iv) more/less (related to quantity)
   (v) tall/short (related to height)
   (vi) heavy/light (related to weight)
   (vii) wide/narrow (related to width)
   (viii) before/after (related to time)

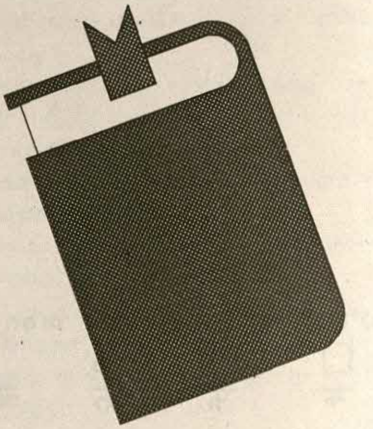
II. Space concepts like:
   over/under
   above/below/in between
   in/out
   first/last
   front/back/middle
   before/after

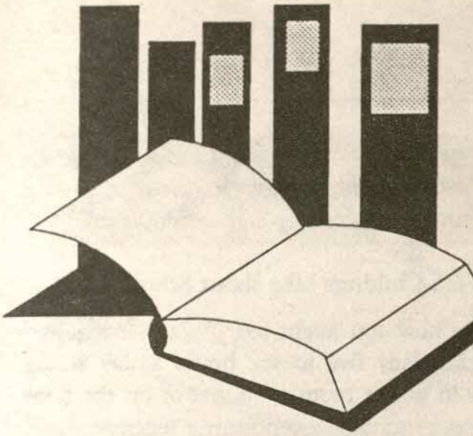
III. One-to-one correspondence

Children should also be given practice in skills of classification (grouping of objects), seriation (ordering of objects along any given dimension), sequential thinking (arranging objects/events in a given sequence), and problem-solving. These are the basic skills required for the learning of science and mathematics later.

Activities for number readiness include

- classification of games using cards, objects, words, blocks, tiles, etc.;
- seriation activities for each of the pre-number concepts with objects, cards, blocks, etc.;
- activites/games for sequential thinking;
- free play with blocks, tiles, etc. (supplied under OB);
- story telling and dramatisation;





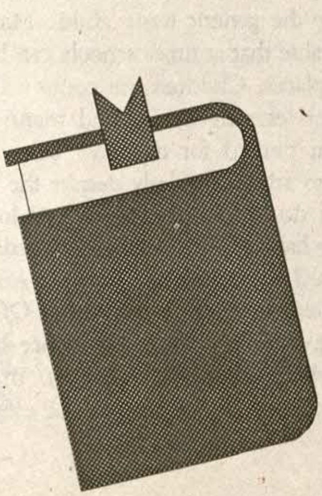
- dramatic play with toys (supplied under OB);
- puzzles (supplied under OB);
- circle games/activities with appropriate rhymes;
- activities with teacher-made materials like dot-dominoes, number puzzles, etc.

Training Strategy

A detailed six-weeks school readiness programme has been drawn up covering different aspects of readiness. This programme can be introduced and presented to the participants for discussion in small groups. If time permits participants should be given live demonstrations with children. Alternatively role-play activities can be organised by asking the trainees to conduct some of the readiness activities in simulated situations.

The session can also be started by organising some introduction games with the participants like 'Be quick – tell me your pretty name' or 'zip-zap', etc. The same games can be played with children in the primary school also as a part of the school readiness programme.

The support material is the Video programme 'Headstart', and 'School Readiness'.



Creating a School Climate for Effective Teaching Learning

R. Muralidharan

Introduction

This unit examines the provisions and procedures necessary to establish a suitable school environment that promotes learning in children. It includes various aspects such as creating an attractive school and conducive classroom arrangement, display of children's work, developing rules and routines, cultivating a personal relationship with children, motivating the girl-children, and so on. Many of our primary schools are two or three-teacher schools. The teachers have to deal with children studying in different classes. Under such a set-up when teachers have to cope with teaching across the classes, it is important to examine how the teacher utilises effectively the time and space available for instruction.

Objectives

After reading this module you will be able to

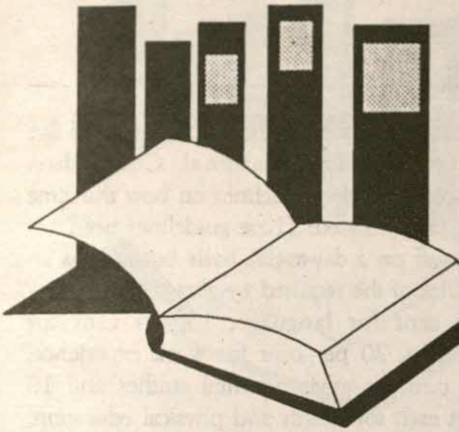
- enlist different components of the school climate for effective teaching-learning;
- identify specific activities associated with creating a conducive school climate for teaching-learning;
- create an atmosphere in school/class which is attractive to children and motivates them to learn;
- manage time and space in a meaningful and relevant manner so as to optimise children's learning and development.

What Do Children Like about School?

Imagine how you might feel if you are required to spend daily five to six hours a day sitting quietly in a bare room on a mat or on the floor listening to someone performing repetitive tasks and subjected to petty discipline. You cannot talk freely, you cannot laugh, you are totally at the mercy of someone who may or may not respect you as an individual. You are constantly told that you have to perform meaningless tasks because it is for your good to equip you for your later life. Don't you then long for your release, look forward to the time that you can leave school and regain your freedom?

Activity 1: First write down what you think children like best in the school and what they dislike most. Then ask children (not the children you teach but other school-going children whom you know in the family or neighbourhood) what they like best in the school and what they dislike most about school. Compare the two sets of responses.

Children generally respond to a warm, pleasant teacher who is positive in approach. Children like to be called by their names and not by the generic term 'child'. Many of us do not realise that at times schools can be alarmingly rude places. Children are continually ticked off for not learning or for bad manners but very seldom praised for desirable behaviour. If Sita came to school regularly despite the fact that she has to do household chores and look after the young baby, she is seldom praised. But if she absented herself for a few days, surely she will be asked why she was absent. Of course, we have to monitor Sita's attendance but if she is praised for attending regularly, there is every possibility of her keeping up the efforts.



Children also like clean, bright surroundings. They do not like to sit cooped up in drab, dirty and bare classrooms. We at times think that without adequate financial input, it is not possible to maintain an attractive school. This is not always correct.

Activity 2: List five inexpensive activities that you can do to brighten up the school/class. Discuss how you can get your pupils to participate in brightening up the place.

To sum up the discussions so far, we talked about the two types of school environment: (a) psychological environment, (b) physical environment. The psychological environment includes respecting children's individuality, being sensitive to their needs, being warm and positive to them, giving a patient hearing whenever children need it, winning their confidence, encouraging them, etc. The physical environment includes a properly swept, clean school, walls displaying children's work, an open playground with play equipments such as ropes, ladders, swings with old tyres or a sand pit, clean mats for children to sit, etc.

Activities for Creating a Conducive Environment

The next part of this module deals with the suggestions regarding specific activities that are likely to create this conducive environment.

For creating a proper psychological environment in the school, the following suggestions may be tried out :

- Get to know the names of every individual child in the class. Address the child by his/her name.
- Greet the children everyday with a smile. Give the children a special word of welcome when they come to school for the first time; come after a long holiday; come after a long period of absence due to sickness.
- Praise children when they do something

which is desirable. Make it a point to show children that we are happy with their good behaviour.

- Physical punishment causes fear and shame in children. It causes more harm than good to them. It is, therefore, better to avoid physical punishment.
- Children have different abilities. Build on children's assets rather than harp on their limitations. Do not put children to shame.
- Every teacher sets a role model to his/her children. Do not expect children to do tasks which we ourselves do not do.

Activity 3: Now let us move on to the physical environment of the school. What are the possible activities?

- Get children to clean up the school premises.
- Encourage children to use the waste-paper basket. They can make one for themselves in the work experience period.
- Select children to form cleanliness committee, drinking water committee, garden committee, display board committee, etc. Children may be encouraged to choose their membership according to their interests.
- Each committee then works out their plan. For example, the garden committee will think of ways and means to start a school garden. The display board committee will decide how they will make display facilities, what they will display, how frequently the display will be changed, etc.
- Talk to the parents/members of the community. How can they help? Will they help in fixing up the play equipment? Will they contribute to buy equipments?

Activity 4: Would you like to add to this list?

Time and Space Management

Now we come to the last objective of this module, that is, managing time and space to optimise children's learning and development.

Most of our schools have a duration of five to six hours. The National Curriculum Framework gives the guidelines on how this time is to be proportioned. These guidelines need not be followed on a day-to-day basis but it gives an overall idea of the required weightage of subjects–30 per cent for language, 15 per cent for mathematics, 20 per cent for work experience, 15 per cent for environmental studies and 10 per cent each for health and physical education, and art education. The school time table needs to be, therefore, drawn on this basis. However, if yours is two-teacher school and if you have to teach more than one class, you require certain adjustments.

For example, between the two teachers, you may like to decide who will teach the young children of Classes I-II and who will work with older children of Classes III-V. By and large, Classes I and II have a large number of children while from Class III onwards there is a drop in the number.

After having selected the classes, then the question arises as to how to go about it. One way of doing it is to conduct certain activities such as creative arts, physical and health education, work experience, parts of environmental studies such as observation, classification, discussion, etc. and parts of language education such as development of listening and speaking skills in large groups. But when it comes to developing competencies of reading, writing and mathematics, it may be better to do it in smaller groups. This arrangement gives the teacher an opportunity to observe if all children are mastering the competencies. Even in the small groups, care may be taken to see that children of different ability levels are grouped together. This will enable children to learn from each other. Child-to-child approach is often found to be effective in helping children learn.

You may probably wonder why 20 per cent of time is allotted to work experience. This is

because children at this stage learn primarily by doing. Many of the motor skills such as eye-hand coordination and finger dexterity, and cognitive skills like observation, reasoning and problem-solving, and social skills like working together, sharing and cooperating are learnt by children through activities involving work experience. Moreover, these activities interest children and they derive a good deal of enjoyment out of it.

Activity 5: Draw up a weekly time table indicating small group and large group learning activities for each area of learning. Do you have any problems in following this time table? Discuss.

The next issue is the management of space. By and large, most of our schools now have at least two rooms. In such a case, both the groups, the older and the younger children, may have a class each for themselves. For small group learning activities, we may keep one class with us while the other class may have activities such as art activities, work experience, etc. which may be done either in the verandah or outdoor if weather permits.

It may also be good to set apart a little space for a science corner or a reading corner. Children may be encouraged to collect samples of plants, rocks, birds' nests, etc. which may be used for discussion.

Activity 6: Draw a plan of your school. Indicate how you would like to utilise the space available. Do you anticipate any problems? Discuss.

Summary

What is a good school environment?

- Clean premises
- Basic facilities such as drinking water, toilet facilities
- A playground for children with some play equipments
- Bright classrooms with display of children's work and other interesting materials

- A science corner/library corner
- Warm, kind, concerned teachers
- Teachers may plan their work in such a way that each child masters the required competencies

Activity 7: Keeping the above-mentioned points in view, check:

Where is your school at the moment?

Where do you want to be?

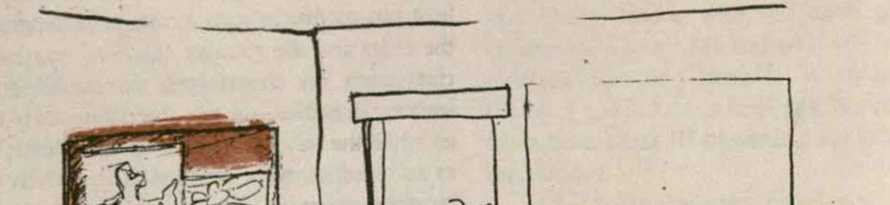
How can you get there?

Support Material

Watch the following videos:

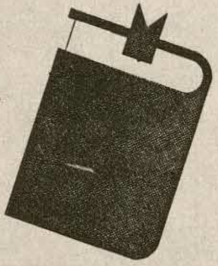
(i) Looking at Learning–Parts I, II and III.

(ii) Child-to-child Approach.



Education of Special Groups

SANDHYA PARANJPE



Overview

There are many children who have learning problems in the classroom. It is a well-recognised fact that majority of these children are disadvantaged and belong to certain specific special groups within the population. The problems they face can arise due to a number of factors within the child, school or at home, which creates barriers in the child achieving his/her maximum learning potential. These learning problems also lead to children dropping out of school. Given this kind of situation the teacher's role becomes all the more significant as he/she plays a key role in the teaching-learning process.

This module deals with identifying children belonging to disadvantaged groups and their learning problems. It also presents ways of meeting the child's individual needs favourably within a conducive learning environment.

While reading through this module you will be required to do several interesting learning activities and exercises to realise the objectives given below.

Learning Activities

While teaching you must have observed children having a variety of learning problems in the classroom. Are you aware that children who are educationally disadvantaged can be classified into certain groups on the basis of social, economic, cultural factors or prevalence of physical and intellectual impairments? Can you think of any such groups? You may discuss this issue with your colleagues in the school and fill up the Activity Sheet No. 1

The Revised National Policy on Education (1992) has identified special groups that require more attention under the Equal Educational Opportunities section. They are women and girls, scheduled castes, scheduled tribes, other backward sections, minorities and the handicapped. All these groups are considered educationally disadvantaged largely due to their being socio-economically backward; a result of poverty, ignorance and social isolation from the rest of the population. The scheduled castes are disadvantaged due to the Indian social structure

Objectives

After completing this module you are expected to be able to

- identify children belonging to special groups within the context of education for all and Minimum Levels of Learning at the primary level;
- identify the major causes leading to learning problems in disadvantaged children;
- understand and list out the problems of the disadvantaged children;
- select and use different resources for classroom management to meet the educational needs of the disadvantaged children; and
- understand that teaching methods and strategies are the same for all the special groups.

Activity Sheet No. 1

I think that children with learning problems can be classified into the following groups:

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________

where they occupy the lowest position in the hierarchy. Occupationally too, they have low status as they do menial or agricultural jobs and are largely uneducated. This causes social problems. The scheduled tribes on the other hand are culturally disadvantaged due to their remote geographical locations and varied dialects leading to isolation. This causes communication problems in school for the children. The illiterate parents cannot provide a conducive learning environment for both groups resulting in lack of proper stimulation and guidance at home. Most children belonging to these two groups are first-generation learners and the school becomes an alien environment for them. Irrelevance of the curriculum results in disinterest, difficulties in understanding concepts and inability to relate it to their real life situation. The minorities and OBC face similar problems in varying intensity. Girls like scheduled castes are largely socially disadvantaged and discriminated against unconsciously. They remain out of school as they are used as unpaid labour or surrogate mothers. Finally, the handicapped are disadvantaged due to their physical or intellectual impairments. These impairments remain unidentified resulting in problems at school of a varied nature and range. Whichever group the child belongs to, learning problems arise out of common causes.

Can you list out some common causes that create learning problems for the special groups just mentioned? Try to think carefully. While doing this exercise you can discuss the matter with other teachers, parents, community members or the children themselves. This kind of a discussion will clarify issues further.

On examining these causes you will see that they fall into three broad areas related to the child, home/family and the school. Many a times there is more than one cause creating problems for the child while learning. You have identified the main causes. It will now be easier for you

Activity Sheet No. 2

I think children from special groups face learning problems mainly due to the following causes/reasons:

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________

Activity Sheet No. 3

Children in my class have these learning problems:

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6.
7. ____________________
8. ____________________
9. ____________________
10. ____________________

to list out the major learning problems arising from these causes.

You will see that most of the problems listed out by you are related to some subject area, i.e. language, mathematics or environmental studies. The problem may be further complicated if the child is shy, insecure and has a poor self-concept, or has a low level of self-confidence. The causes are thus not always mutually exclusive. As a teacher you will face a situation like this most of the time. To make this point clearer, three case studies have been presented for which you have to list out action points that you will take in resolving the problems faced by the three children.

Case Study No. 1: A tribal has a hearing problem. He cannot pronounce words clearly and makes spelling mistakes while writing. He can only speak in his tribal dialect.

Case Study No. 2: A girl who is totally blind, cannot understand many concepts and has difficulty in moving around the classroom. She does not participate in class activities and sits in a corner all by herself.

Case Study No. 3. A scheduled caste boy finds mathematics difficult. He cannot write numbers properly and gets confused between addition and subtraction.

Fill up the activity sheet based on the following questions.

1. Which special groups do the three children belong to?
2. Do they belong to only one or a combination of two or three groups?
3. What action will you take to meet the educational needs of the three children?

When you compare the action points listed out above for the three case studies you will observe that the teaching strategies are common. The difference lies in the way that the curriculum is adjusted, classroom managed, resources used and materials/aids and appliances utilised. This depends on your preparation, planning and innovation as a teacher. This also brings out an important aspect when dealing with individual needs in the classroom, i.e. there are no special teaching methods or specific strategies to be used for the handicapped only, or any other special groups of children. The choice of teaching methods, strategies and their usage is to be based on the needs, interests and requirements of the child.

How then, will you deal with children who have special needs arising due to some impairment? You must realise that there may be a number of disabled children who are already in your classroom. These are generally those children with mild disabilities like visual, hearing or locomotor impairment, lower level of intellectual functioning or learning disability. It is important that you identify such children, cater to their needs and requirements, as they might otherwise eventually drop out of the school. How will you go about doing this task?

Activity Sheet No. 4

	Action points		
	Case 1	Case 2	Case 3
Special Groups	( )	( )	( )
Action Points			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

The first step is identification. It is unfortunately widely believed that disabled children can only be identified by doctors or specialists. However, the truth is – identification is much easier than you think, as a disability is usually observable in most cases.

Let us deal with each kind of disability and see how it can be identified so that learning can be made easier for these children with special needs. A list of reading material and one video cassette Dishayen Part I have been given at the end of the module to help you visualise and understand as to how a disabled child can be educated in a common classroom.

Visual Impairment

There are children who are blind. They have no vision or have only light perception and show a lack of mobility and orientation. They experience difficulties in understanding concepts, information processing and establishing social relationships. They need braille as they cannot read ordinary text. Due to these reasons learning problems are observed. Those with low vision can read with the help of magnifying glasses or large print. Some have restricted field vision, while in others vision can be improved if lenses are used.

Identification

As a teacher if you observe some of the behaviours given below the child may be referred to a specialist for diagnosis and assessment. The observable behaviours are:

Check-list

- Observable deformity in the eye(s)
- Rubs eyes frequently
- Frequent redening of eyes
- Covers one eye and tilts the head forward
- Holds objects including the book close to his eyes
- Asks other children for help when taking notes from the blackboard
- Blinks frequently
- Squints eyelids together
- Eyes water

- Complains about headache following close eye work
- Bumps into people or objects.

You can help such children through efficient classroom management by incorporating the action points given below into the plan of education for the child.

Action Points in Education

- seat the child in the front row
- use more auditory and tactile aids
- use more language and verbal cues while teaching
- use three-dimensional aids
- give clear and specific instructions while teaching or doing tasks
- read aloud while writing on the blackboard
- ask a peer to help the child
- label materials in braille or large print
- minimise sounds while teaching

Teaching-learning can be made even easier by providing lenses, magnifying glasses, large printed material, audio cassettes and actual objects.

You may have dealt with a child having a visual problem. Can you think of any other action points? Please list them in Activity Sheet No. 5.

Hearing Impaired

Communication plays an important role in learning. A child who cannot hear properly may also develop speech problems leading to interference in both their learning and performance. Identifying children with mild hearing impairment is difficult as it is not visible, like other impairments, e.g. blind *or* locomotor disabilities. Due to improper hearing inputs or lack of them such children have more difficulties in language learning and usage. This is reflected in their writing and spelling mistakes. Reading correctly also becomes difficult. Hearing aids and mirrors can help to a certain extent.

Identification

The observable behaviours displayed by such children are given below in the check-list.

Check-list

- Has observable deformity of the ear(s)
- Frequent discharge from the ear(s)
- Complains of pain in ears frequently
- Scratches ear(s) frequently
- Turns head on one side to hear better
- Frequently requests the teacher to repeat directions and questions.
- Makes many errors in taking dictation
- While listening to the teacher watches his face carefully
- Displays speech difficulty

Refer the child to a doctor and tell the parents that corrective action needs to be taken. In the classroom you can help to educate the child better by incorporating the points given below.

Action Points in Education

- Seat the child in the front row of the class to improve his/her listening

Activity Sheet No. 5

Action points for improving the learning of visually impaired child:

1. ______________________
2. ______________________
3. ______________________
4. ______________________
5. ______________________
6. ______________________
7. ______________________
8. ______________________

- Talk loudly, clearly and slowly with the child
- Ask the child to observe your lip movements while you teach
- Face the child as much as possible while teaching
- Minimise outside sounds and noises that cause disturbances.
- See that there is sufficient light on you when you talk
- Use charts, objects and demonstrations extensively
- Ask a peer to help the child
- Use action-oriented situations while teaching
- Use drill and practice especially for children with speech defects

Make sure that if the child is using a hearing aid it does function properly otherwise no amount of planning or improvisation will help. Based on the above points how will you help a child who cannot differentiate between 'g' and 'k'. This leads to her making spelling mistakes, e.g. 'game' is spelt as 'kame'.

Try to plan the child's education on the basis of curriculum adjustment, classroom management, and the use of aids and appliances keeping in mind the action points given above. What teaching methods will you use?
Make a plan of action in Activity Sheet No. 6.

Low Intellectual Functioning

Some children show consistently poor academic performance, social maladjustment and adaptive behaviour problems in the classroom. They may have no visible physical problems but have a short span of attention and memory and are slow in following instructions.

Identification

How can such children be identified? Some observable behaviours for identifying them are given below.

Check-list

- Displays poor academic achievement
- Forgets learning after a short time
- Are inattentive and distracted
- Show too much reliance on presentation of concrete objects
- Seeks immediate reward
- Displays fear of failure
- Has poor self-image
- Lacks self-confidence
- Has restricted communication
- Has poor muscular coordination
- Seeks repetition and practice
- Has difficulty in doing things for himself like eating, dressing, bathing and grooming
- When the child is told to do something, he/she has a problem in understanding what he has been told
- Compared with other children of his age, the child appears dull or slow of manner
- Compared with other children the child has difficulty in learning to do things
- Has difficulty in understanding abstract things

Activity Sheet No. 6

Deal with the hearing impairment in the following way:

1. ____________________________
2. ____________________________
3. ____________________________
4. ____________________________
5. ____________________________
6. ____________________________
7. ____________________________
8. ____________________________

- Takes more time in learning a particular skill as compared to other children
- Avoids participating in classroom activities as other children of his age do
- Shows too much dependence on concrete examples

As a teacher you can help this child by referring to the action points given below, to make your task easier.

Action Points in Education

- Adopt a strict developmental sequence while teaching
- Break up the task into small steps
- Present more concrete, real life experiences
- Repeat the task in a drill procedure, till mastery is acquired
- Be flexible in transacting the curriculum
- Give rewards from time to time
- Encourage group activities and participation
- Give clear, specific and simple instructions
- Use a variety of activities to keep interest alive

Learning Disablility

Children with learning disability have limited ability in specific areas of learning like reading, writing, spelling or mathematics. For example, they write '19' as '91', and get confused between '×' and '+' signs. This is the result of a disorder or deficiency in any one of the psychological processes. Some have behavioural problems as well. Most of these children are above average in intelligence.

Identification

Identifying these children can be done by using the check-list given below:

Check-List

- Does not read well although his oral answers are intelligent
- Makes mistakes in spellings, especially omits letter in words or changes their place, e.g. 'pat' instead of 'tap', or 'felt' as 'left', 'rember' in place of 'remember'
- Writes numbers wrong, e.g. '12' as '21'
- Acts distracted and cannot remember his time table
- Is always untidy and late in submitting homework and coming to class
- Does not do well in examinations although she is clever and has no physical disability
- Is so excited that he is unable to complete any task
- Omits words or lines in reading
- Reads individual letters in the words but has difficulty in putting the sound of the letters together. For example, he may sound b/e/g and say 'bad' or sound f/o/g/ but say 'frog'.

These children need a lot of training, practice and encouragement so as to improve their perception, attention span and visual/motor coordination. This can be done by referring to the action points listed below.

Action Points in Education

- Break the learning activity into small steps
- Present the same task in a number of different ways
- Do not teach letters, words or numbers that resemble one another, together
- Be flexible in trasacting the curriculum
- Use a lot of activities to reinforce learning
- Encourage active participation of the child
- Give credit/rewards for correct responses
- Keep the child busy in activities
- Use the multi-sensory approach
- Provide different concrete experiences with learning aids.

How will you distinguish between an educable mentally retarded child with the one who has a learning disability? The difference lies in the fact that the educable mentally retarded child faces difficulty in all aspects of learning, whereas the learning disabled is normal in all other aspects except for the particular area of learning. A few cases are given below. Try to identify to which category they belong, learning disabled or low-intellectual functioning.

Locomotor Disability

These children have some kind of physical impairment relating to muscles and joints. It affects their mobility, otherwise they are like any other children with learning capabilities. They may, however, develop adjustment problems due to their visible deformity or defect.

Identification

These children are easier to identify as the disability is usually observable. A check-list is given below to make the task easier for you.

Check-list

- Observable deformity in any part of the body
- Has difficulty in sitting, standing or walking
- Has difficulty in picking up, holding and putting objects on the ground
- Complains frequently of pain in the joints
- Has difficulty in holding a pen to write
- Walks jerkily
- Involuntary movements of limbs
- Has amputated limbs

The child should be referred to the doctor and parents consulted, as aids have to be given to facilitate proper movement and functioning of affected body parts.

Action Points in Education

- Encourage active participation of the child in all activities
- Avoid sarcasm or criticism by other children
- Encourage peer group interaction
- Place the child keeping in mind the aid or appliance being used, e.g. a wheel-chair will need more space and crutches will need less space for being kept
- Arrange the classroom to facilitate maximum movement of the child
- Present adequate opportunities for the child to participate in games, recreation and physical activity
- Ask peer group to help, if required

With proper aids and appliances, and encouragement these children can be dealt with very easily.

Finally, teachers may remember that every child's needs must be catered to individually and

Activity Sheet No. 7

Against the case studies given below, mention whether the child is with a learning disability or low-intellectual functioning.

Case Study	*Type of Disability*
1. Cannot distinguish between singular and plural	______________
2. Cannot put food properly in the mouth	______________
3. Writes '24' for '224'	______________
4. Adds with the help of sticks and stones, otherwise cannot do addition	______________
5. Knows but forgets to tie the shoe laces	______________
6. Cannot tie her ribbons	______________

Activity Sheet No. 8

Steps to be taken in dealing with child's learning problems :

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________

they be educated accordingly. After going through this module, can you specify what steps you would take to do so?

You can see for yourself that all the steps are sequential and they logically follow one another so that corrective action may be taken. Once a child with a learning problem has been identified you need to

- refer the child to a medical practitioner if he/she has a physical or intellectual impairment;
- talk to the parents and see if any aids or appliances are needed;
- assess what the child can do. This will reveal the potentialities and capabilities;
- plan as to how the curriculum will be made accessible with particular reference to the specific problem. Making the curriculum accessible is the 'key' to success;
- curriculum transaction can be done through efficient classroom management, curriculum adaptation and use of appropriate aids and materials, encouraging the activity based and the cooperative learning approach; and
- cooperation with parents, other teachers and students is crucial to the success of meeting individual needs in the classroom.

Self-evaluation Exercises

1. A tribal child having hearing impairment has learning difficulties in the pronunciation of certain letters. How will you help this child to overcome his/her difficulties? Write out a detailed plan of action.

2. A scheduled caste boy is not interested in coming to school because he finds addition and subtraction difficult. What kind of teaching methodology will you use to make these concepts clear to him? What activities will you include in your approach to make the teaching-learning process easier?

3. A blind or a low-vision child has to be taught the concept of weight, i.e. heavy, light. How will you teach? Will there be any differences in your choice of methodology, use of aids and materials, classroom management and activities? If yes, why?

4. A girl has difficulty in the use of singular and plural words. How will you teach the concept to her? What games or activities will you use to make this interesting and at the same time easy to learn.

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Sharma, P.L., *Handbook on IED for Primary School Teachers*, NCERT, New Delhi, 1988.

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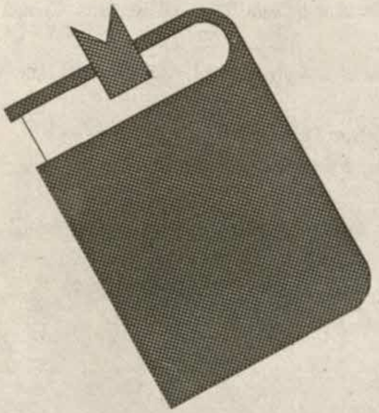
The following Video Programme can be used. It can be procured from the Central Institute of Educational Technology, NCERT, New Delhi.

1. *Dishayen* : Advocacy for Integrated Education for Children with Disabilities

Role of Teachers in Girls' Education and Women's Empowerment

PROF. USHA NAYAR, DR KIRAN DEVENDRA,
DR JANAK DUGGAL, DR SUSHMA S. JAIRETH,
DR RAJ RANI, DR GAURI SRIVASTAVA



An Overview

Education of girls and women has become a major policy concern in India, both as a human right and as a development imperative. The National Policy on Education (NPE 1986) and the Programme of Action (POA 1986), (revised in 1992), give an overriding priority to removal of gender disparities. The NPE is, perhaps, the most radical document of its times and is a major landmark in the evolution of the status of women in India. The policy addresses not only the issue of equality of educational opportunities for women but in fact commands the entire educational system to work for women's equality and empowerment. The Programme of Action envisages development of institutional/departmental plans for integrating gender concerns within the education sector. The POA, also, emphasises inter-sectoral collaboration and convergence of efforts of all concerned ministries and NGOs in promoting universal literacy and universalisation of primary education with focus on girls and women. The total approach of the NPE and POA is to link education of girls and women to broader concerns of national development and to develop in them a culture of self-reliance, a positive self-image and the capacity to participate in decision-making at all levels on equal footing.

Excerpts from the National Policy on Education are reproduced below :

"Education will be used as an agent of basic change in the status of women. In order to neutralise the accumulated distortions of the past, there will be a well-conceived edge in favour of women. The National Education System will play a positive, interventionist role in the empowerment of women. It will foster the development of new values through redesigned curricula, textbooks, the training and orientation of teachers, decision-makers and administrators and the active involvement of educational institutions. This will be an act of faith and social engineering. The Women's Studies will be promoted as a part of various courses and educational institutions encouraged to take up active programmes to further women's development.

The removal of women's illiteracy and obstacles inhibiting their access to, and retention in elementary education will receive overriding priority through provision of special support services, setting of time targets, and effective monitoring. Major emphasis will be laid on women's participation in vocational, technical and professional education at different levels. The policy of non-discrimination will be pursued vigorously to eliminate sex stereo-typing in vocational and professional courses and to promote women's participation in non-traditional occupations, as well as in existing and emergent technologies."

Teachers have an invaluable contribution in creating a just and humane society. They have to ensure that all children who come to school learn to live together with fellow humans in a spirit of mutual love, care and dignity.

The National Curricular Framework

The National Core Curriculum besides being undifferentiated for both sexes emphasised core values such as equality between sexes, ending social evils and practices derogatory to women, small family norm, democracy, secularism, national integration, conservation and protection of environment, etc. The NPE and the POA highlighted the need to improve the social, nutritional and health status of the girls and also strengthen support services such as drinking water, fodder, fuel and Early Childhood Care and Education (ECCE) as an integral component of UEE. The POA, further, emphasised the need to revise textbooks to remove gender bias and gender sensitise all educational personnel so that equality between sexes could be internalised through gender sensitive, gender inclusive curriculum and its transaction.

"All teachers and instructors will be trained as agents of women's empowerment. Training programmes will be developed by the NCERT, NIEPA, DAE, SRSs, DIETs, SCERTs and the University system. Innovative training programme will be designed with the assistance of concerned organisations and women's groups."

This unit is designed to equip and empower teachers to play their role in effective implementation of the National Policy on Education (1986) (Revised 1992) and mandate to make education a major instrument of women's equality and empowerment. The focus is on the 'Girl Child'.

Expected Outcomes

The teacher would be able

- to further appreciate the importance of girls education;
- to identify barriers to universalisation of Primary Education among girls in the overall context of the social situation of girls and women;
- to plan suitable action for (a) improving access, enrolment, retention and achievement among girls, (b) transaction of gender-bias free curriculum and conscious intervention to promote equality between sexes and women's empowerment.

CONTENT

(i) Knowing and Understanding

Importance of Girls' Education

- as a basic human right and means to development of personhood, self confidence and a positive self image;
- for equipping girls to successfully interact with their social environment (decision-making, leadership and communication skills);
- as an input into raising the quality of life of family, of the nation (reduced mortality and morbidity of children, and smaller healthier family).

Present Situation of Girls and Women

- How gender discrimination (attitudes and behaviour) results in gender disparities in social, demographic, educational and employment indicators and in political participation.

State Intervention : Policies and Programmes

(ii) Action and Reflection

Role of the Teachers

- as a mediator between students and the world of knowledge, between students and their social environment; family, community and society;
- as a manager of classroom interaction;
- as a counsellor;

- as a community leader and catalyst;
- as an activist and disseminator of the rights of the girl child and women;
- as an action researcher: doing and evaluating own action and efforts.

METHODOLOGY

- Female life cycle approach
- Lecture-discussion
- Group work
- Exercises
- Audio-visual
- Presentation on overhead projector
- Flip charts
- Films

Introductory Questions

The topic may be introduced as follows:

1. What do you know about the Constitution of India?
   (Clue—Constitution of India and its Articles)
2. What are the significant aspects of the policy pertaining to girls' education and women's empowerment?
   (Clues–para 4.2 and 4.3 of NPE)
3. According to you what are the main hurdles regarding UPE among girls? (Pertaining to access, enrolment and retention.)
4. What social evils do you see that affects women the most?
   (Clue–dowry, early marriage)
5. What future is the school preparing the girls for?

Policy Framework

The Indian Constitution grants not only equality to women but empowers the State to take special measures to raise the status of women. A large number of laws have been passed to ensure this. The Constitution renounces any practice derogatory to the women. Women thus enjoy equal rights and opportunities in political, economic and social spheres and can reach the highest public office in the land. Article 45 enjoins on the State to provide for free and compulsory education for all children up to the age of 14.

A large number of educational commissions and committees further emphasised the need to give equal education to girls and the need to provide undifferentiated curricular for both boys and girls. A special committee on education of women (1959) recommended that home science be made compulsory subject for both boys and girls in Classes VI to VIII.

Life Cycle of Discrimination

I. In a population of 846 million in India, there are only 407 million females compared to 439 million males. Males outnumber females by 32 millions (1991 Census).

II. In India the sex ratio is not only adverse to female but has declined tremendously from 972 in 1901 to an all time low of 927 in 1991. Between every census, millions of females disappear.

III. More alarming than the overall situation is the fact that while the sex ratio for all population fell by 8 points during 1981-91, in the age-group 0-6 years, this has declined much more sharply from 962 to 945, i.e. by 17 points.

Females suffer greater loss of life in all age-groups from birth to the age of 34 years, with the trend reversing after that. The death rates in rural areas are twice as high as those for children below 4 years in urban areas. The causes for higher female mortality range from female foeticide, female infanticide, a conscious neglect of health and nutritional needs of a female from birth, through adolescence to youth. Early marriage, unsafe motherhood, lack of medical attendance of child births, poor health and development infrastructure, illiteracy and discriminatory socio cultural values and attitudes, believes and practices which compound the already precarious condition of females, especially in large parts of rural India where three-quarters of our population live.

- One in every six female deaths is caused by gender discrimination and gross neglect.
- A strong son preference leads to neglect the female children and their mothers.
- Female foeticide is a growing menace and if the present trend continues these could cause significant demographic imbalances.
- More girls are underfed which leads to malnutrition and low-resistence to disease.
- Hospital records show that more boys are brought in for treatment, girls are usually admitted only when they are critically ill.
- Early marriage of girls often as babies leads to the beginning of miseries. Married girls are often held back from schools. The long cycle of pregnancy sets in leading to her physical deformities and also give birth to low-weight babies.
- Early marriage combined with pressure of poverty, the girls are not sent to school. Other girls miss out on schooling because of lack of facilities within habitat. Poor basic education prevents them from access to vocational and technical education leading to unskilled, low paid, invisible labour resulting in low prestige occupations.
- This often leads to negative self esteem. This becomes an inter-generation phenomena.
- Often repressed girls and women are not expected to have a voice. They enjoy little freedom of expression and movement. They are not allowed to participate in decisions even about themselves.
- Brought up in this mode, they are unable to participate in political processes–leadership and decision making continues to be in male hands. Women form less than 6 to 10 per cent of State and National Legislatures.

Table 1 shows the enrolment ratio of girls at the Elementary Stage and Literacy Rate in States/UTs in the year 1991.

Table 1

Rank	*State/UT with literacy rate greater than 50 per cent*	*Literacy rate 1991*		*Index of gender equality*	*Enrolment ratio 1991-92*			
					Primary		*Upper primary*	
		Female	*Male*		*Boys*	*Girls*	*Boys*	*Girls*
	Group A States							
1.	Kerala	87	94	96	100	98	106	104
2.	Mizoram	78	84	93	140	133	76	73
3.	Chandigarh	74	83	94	61	59	57	57
4.	Lakshadweep	71	87	93	157	135	118	97
5.	Goa	68	86	89	106	97	112	96
6.	Delhi	68	83	89	87	88	83	80
7.	A&N Island	66	80	89	100	85	88	76
8.	Pondicherry	66	84	88	148	136	135	117

Rank	State/UT with literacy rate greater than 50 per cent	Literacy rate 1991		Index of gender equality	Enrolment ratio 1991-92			
					Primary		Upper primary	
		Female	Male		Boys	Girls	Boys	Girls
9.	Daman & Diu	61	86	83	–	–	–	–
10.	Nagaland	56	66	96	114	104	70	68
11.	Himachal Pradesh	52	75	83	125	109	125	98
12.	Tamil Nadu	52	75	82	142	128	109	86
13.	Maharashtra	51	75	80	132	119	92	67
14.	Tripura	50	70	83	144	122	90	71
15.	Punjab	50	64	87	102	95	79	66
Group B States (40-50 per cent)								
16.	Manipur	49	73	80	117	104	67	59
17.	Gujarat	49	73	80	142	111	85	59
18.	West Bengal	47	67	82	140	108	74	56
19.	Sikkim	47	64	84	127	113	49	48
20.	Meghalaya	45	52	93	67	63	64	54
21.	Karnataka	44	67	79	115	107	66	47
22.	Assam	44	62	82	117	109	69	55
23.	Haryana	41	68	74	94	79	75	51
Group C States (below 40 per cent)								
24.	Orissa	34	62	71	120	87	65	38
25.	Andhra Pradesh	34	56	75	123	95	71	43
26.	Arunachal Pradesh	29	51	71	128	91	57	37
27.	Madhya Pradesh	28	57	65	119	89	74	36
28.	D & N Haveli	26	52	65	116	87	55	35
29.	Uttar Pradesh	26	55	63	105	87	88	33
30.	Bihar	23	53	60	105	56	53	21
31.	Rajasthan	21	55	54	107	50	66	23
32.	Jammu & Kashmir	–	–	–	102	71	76	47

Usha Nayyar, *Universalisation of Primary Education of Rural Girls in India*, NCERT, New Delhi, 1993

Source : 1. Literacy figures are from Statistical Database for Literacy, National Institute of Adult Education, New Delhi, 1992.

2. Enrolment data is from *Selected Educational Statistics*, 1990-91, Department of Education, Ministry of Human Resource Development, New Delhi, 1993.

Dropout Rates and Retention

The dropout rates are steadily falling but continue to be higher among girls compared to boys (See Table 2).

Table 2

Dropout Rates in 1980-81 and 1988-89

	1980-81	*1988-89*
Classes I-V		
Boys	56.2	46.7
Girls	62.5	49.7
Total	58.7	47.9
Classes I-VIII		
Boys	68.0	59.4
Girls	79.4	68.3
Total	72.7	65.4

Source : MHRD, *Education for All*, 1993

A rough measure of retention is the enrolment in Classes V and VII as percentage of Class I at any given point of time. The all India figures show that enrolment in Class V as percentage of students in Class I was 45.06 and gets reduced to 25.35 in Class VIII (1986-87). For every 100 girls in Class I in rural and urban areas, respectively there are only 40 rural girls compared to 65 urban girls in Class V and only 18 rural girls and 52 urban girls in Class VIII. In Class XII, this percentage is reduced to 1.44 for rural girls compared to 14.04 for urban girls. The inter-state variations are large. High female enrolment states of Kerala and Punjab for instance have more number of girls in Class II compared to Class I at the moment. (Nayar 1993).

Causes for High Dropout and Non-enrolment of Girls

Various studies conducted by the DWS give the following main reasons for high dropout among girls as perceived by the parents, the community, the girls themselves and the educational practitioners.

- Domestic work, care of siblings, parents o illiteracy, early marriage, helping parents with household work/occupation, lack of motivation, parents inability to pay extra tuition fee, social taboos, low access and provision of educational facilities, lack of support services of child care, medical and health care, low valuation of female life itself and discriminatory attitudes towards female child in access to food, health care and education, poverty and illiteracy, and lack of motivation of parents.

Women Teachers

Women teachers formed 29.47 per cent of primary, 33 per cent of middle, 33.77 per cent of high and 31.20 per cent of higher secondary school teachers in 1991-92. Rural areas continue to face an acute shortage of female teachers. At the primary stage, the proportion of female teachers is only 21 per cent in rural areas, as against 56 per cent in urban areas. At the upper primary stage, women teachers account for 23 per cent in rural and 57 per cent in urban areas. It may be noted that the states having lower proportion of female teachers have low female literacy and low female enrolment states. Due to under development of rural areas in general and of education in particular, rural girls seldom reach the higher secondary stage, and teacher training institutions. It is this vicious circle that the rural girls are trapped in.

II

Undoing the Damage

In Part I, we have tried to map out and understand as to how gender-based discrimination affects the female adversely and in the long run affects the nation as a whole. Let us now think together as to what action can be taken by us to undo the damage by removing the barriers and disabilities faced by the girl child.

(a) Ensuring the right to survival
(b) Protection from all forms of abuse, physical and mental
(c) Help in her all round development as a free citizen of a free nation and above all as a person, as a human being

This is perhaps the biggest challenge of our lives so that we do our best to see girls come to school, learn and grow up as confident persons with a positive self image and contribute to the development of our nation, our world.

In the following pages, we provide you with some hints only, for we are confident that you will yourself find creative and pragmatic solutions according to the context in which you live and work. Indian society is not a monolith. The status of a girl child is directly affected by the situation of women in a particular group, in a particular community, in a particular region.

Some Hints

Teacher as a Manager

For Improving Access, Enrolment, Retention and Achievement of Girls

A primary teacher is often the head teacher and as such an educational administrator. As an administrator, he/she can function in the following ways :

- Contacting block/district authorities for providing more school places (formal/non-formal) by creating better physical facilities, especially toilet facilities for girls and medical facilities for the children;
- Organising timely distribution of incentives to girls such as books, uniforms and attendance scholarships;
- Making sure that there are *Anganwadis*, creches near the school or alternatively get NFE centre opened/shifted nearer the *Anganwadis*;
- Contacting parents and making them aware of the usefulness of girls education;
- Organising girl child campaign in collaboration with *Mahila Mandals* and Village Panchayats and NGOs, if any;
- Arrangement for special drive for girls enrolment in collaboration with *Mahila Mandals*, Village Education Committees, Youth Organisations, etc.
- Ensure and encourage girls for enrolment and retention, and help them to improve their achievement. Encourage them to continue their studies beyond primary and, if necessary their parents may be pursued;
- Discussion with higher authorities for opening middle classes-formal/non-formal in the same school.
- If required make transport arrangements for girls to commute to other nearby villages by bus or cycle;
- Identify potential dropout girls. Those girls who are irregular, late comers, with poor academic performance, have a negative self-image, burdened with excessive domestic workload, sibling care, participate in economic activities or illness of girls or parents are likely to dropout. These girls should be identified and suitable interventions should be made accordingly;
- Organise remedial classes for low-achievers;
- Help high achiever girls to continue their studies thus opening their doors for modern occupations;
- A permanent committee of school principal, teachers, creative artists should be set up to suggest and prepare school programmes related to awareness e.g. skits, dramas, debates, poster-making, etc.
- Formation of PTA by school authorities is a necessity for inculcating positive values and attitudes in both the parents and the child;
- Counsellors should be appointed or made available on a part-time basis by school authorities for looking into students' problems and offering vocational guidance.

Teacher and Classroom

(i) Do not seggregate boys and girls in the classroom in primary classes.
  - have a set of two monitors in each class— a boy and a girl;
  - make mixed groups for group activities. Avoid single-sex groups;
  - encourage both the boys and the girls to read aloud, recite and speak on topics related to their immediate lives.

(ii) If girls in the class are passive listeners, make special effort to direct questions at them and other shy children.

(iii) Try 'role switch' for breaking down gender barriers and stereotyping of gender roles (which children internalise before reaching the school). Try to relieve girls of activities that are related to domestic chores, orderliness and cleanliness.

(iv) Avoid being overprotective or partial towards girls openly as this generates resentment in the boys.
  - derogatory remarks like– *Abe too ladki hai jo rota hai*
  - running down a girl who is playful and active–*mai munda* in Punjab

(v) Preparing girls for participation in panchayat activities.

Activities to be Organised by the Teacher

Game I : Observance of cleanliness and beautification day in a week. Make boys as well as girls participate in cleaning operations jointly. Dust the room, the desks (if any), clean the blackboard, the window panes, pick flowers and leaves and arrange them (if available). Engage the children in making posters, collages and wall hangings to beautify the classrooms.

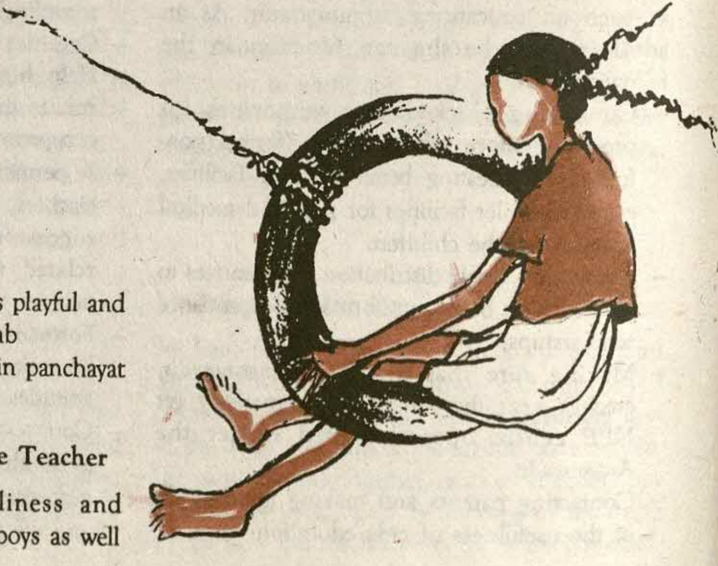
Game II: Entertaining Visitors

Arrange mock play to entertain visitors at school and home. Let both girls and boys prepare soft drinks and serve to visitors.

Ensure a girl–boy team to receive the chief guest including presenting the flowers and garlands and making 'welcome' and 'thank you' speeches. (These tasks are usually given only to girls.)

Game III: Panchayat/Parliament (for Grade IV and V Students)

Mock Panchayats/Parliament sessions be arranged in which both girls and boys participate together. Role play by girls as Sarpanch, members of Parliament/Prime Minister/Ministers be enacted.



Game IV : Introduce class elections with equal number of girl/boy candidates. Have 5-6 class monitors elected for different portfolios like :

(i) classroom maintenance
(ii) classroom discipline
(iii) supervising personal cleanliness of clothes, nails, shoes, etc.
(iv) collection of assigned home work by teachers.

Game V : *Playground Activities*

Encourage participation of girls and boys in sports, games, cultural activities. Usually girls are silent spectators, especially in sports and boys don't participate in group dances which are perceived as girls' roles.

Game VI : *A Picnic*

Arrange picnics where smaller children eat together, share their food and clean their tiffin boxes.

Older children, boys and girls be encouraged to cook meal together and share related chores of fetching water, serving the food, cleaning the dishes, etc.

Teacher and the Curriculum

Curriculum transaction is very important. While transacting it, please ensure that it is done without transferring gender bias. Transaction of gender-bias free curriculum will ensure retention of girls in school and inculcation of self image among girls.

Textbooks are an important and sometimes the only means of transacting curriculum to the pupils, especially at the primary level.

Textbooks are being revised by all the states to remove gender bias and to incorporate materials depicting the past and present contribution of women and the positive roles they can play in future. For the time being, the teachers may have to use textbooks which show :

(i) Predominance of male characters and male authors.
(ii) Men in lead roles (the few) and women in service which consist of either menial work or assistance to dominant and authoritative role of men.
(iii) Qualities attributed to men are fearlessness, courage, bravery, initiative, resourcefulness, while women are seen as passive, timid and disorganised.
(iv) Visuals show a preponderance of males in action, as teachers, as leaders, as doctors, as farmers, women appear as house-wives, mothers, maids, seldom as farmers, factory workers, doctors, pilots, officers.

The teachers would have to use their ingenuity and initiative in undoing the damage which textbooks and other materials do to children, by giving the message that men are powerful, strong and great, and women are weak, dependent and less efficient.

Some Suggestions for Curriculum Transaction

1. Effective pictures and illustrations be shown to the children that a woman is not merely a mother but she can be a teacher, a doctor, a professor, an engineer, an administrator, a politician, a diplomat, a captain of a ship, a pilot of a plane, a social reformer or a social worker like Mother Teresa, a freedom fighter, a lover of wild animals, etc. The pictures and illustrations showing the women in the above capacities should abound on the walls of classrooms and in the textbooks and supplementary readers.

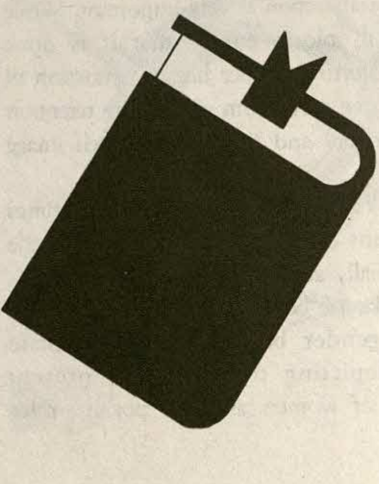
2. The teacher should guide and teach the students through visual aids like pictures, puppets depicting women working in the fields as hard

as men, working in the hospitals with men, working in factories with men, facing and handling heavy and dangerous machines for long hours, attending to the household duties such as drawing water from a well, cutting wood for fuel, washing clothes in cooperation with men-folk in addition to mere buying things from the market.

3. The teacher should on occasions invite women writers, artists, musicians and such other talented personalities to talk to them or give performance before them showing their talent.

4. The teachers should set right the prejudices that are commonly seen in the present textbooks.

While transacting subjects like mathematics, environmental studies and languages emphasis should be laid on examples that include both boys and girls; men and women from different walks of life.



Mathematics

Value	*Example*
To highlight through mathematical illustrations, that both the sexes have equal rights in the family property.	Vikas at the time of death, left a sum of Rs 51,000 for his two daughters and one son. If they shared equal money, how much money did each get?
To help in the eradication of social evils such as dowry, death ceremony, etc. by highlighting their arithmetical aspects.	Sushma's father Sant Singh was fined Rs 450 by a court for the offence of offering dowry at the time of her marriage ceremony and her father-in-law Chaman Lal was fined Rs 1350 for the offence of accepting the dowry. How many times more did Chaman Lal have to pay in comparison to Sant Singh?
To highlight new and changing roles of women outside the home.	Rani's mother who is a doctor spends 4 hours every Sunday in a village. If there are four Sundays in a month, how many hours does she spend in the village?
To highlight growing participatory role of women in all walks of life.	680 students of a girls' school were NCC cadets in 1992 or 1993. Out of these, 350 were cadets in 1992, and 280 were in both the years, i.e. 1992 and 1993. Find the numbers of NCC cadets in the school in the year 1993.
Home management to be understood as joint responsibility of all the members of the family.	Due to mother's illness, Mary and her elder brother had to work at home daily for 2 hours 15 minutes and 3 hours 45 minutes, respectively. How much more time did the elder brother work daily as compared to his sister?

Environmental Studies

Value	*Example*
Physical attributes and differences do not reflect superiority or inferiority.	The differences in size and weight are purely individual and are due to age, sex, environment and heredity. These characteristics do not make a person superior or inferior.
All the individuals of our society are jointly responsible for the maintenance of the environment.	Problems created by overgrazing and indiscriminate felling of trees should be highlighted. It may be pointed out that both men and women are responsible for this. Therefore, both men and women should be aware of the danger and take active steps to restore and maintain the environment.

Value	Example
Need-based food for the members of the family.	There is a basic similarity in the skeletal and muscular structure in men and women. Basic food requirements are also similar for the growth and development of male and female human body.

Language

Value	Topic
To understand the positive contribution made to the economic system by women in different regions.	Resources and their development
To analyse the nature of exploitation of working people in general and women in particular and react to these conservative values in our society.	Means of transport and communication
To help the child appreciate equal responsibility of male as well as female members of the family for a successful living.	Our family
To help the child appreciate the interchangability of roles in a family.	Our school, our neighbourhood
To help the children understand contributions of various groups of men and women to the cultural, scientific and political development of different regions.	Studying the globe and map of the world
Women play an important role in the development of different aspects of culture viz. religion, literature, art, science, etc.	Biographies of eminent personalities from world and Indian history
Women have participated effectively in the freedom movement of India.	Certain crucial phases of the history of freedom movement of India
The girls should be provided with equal educational facilities along with boys.	Civic amenity

ETV Support

1. *Mein Bhee Padhungi*
2. *Subah Ho Rahi Hai*
3. *Leela* Part I
4. *Meena Count Your Chikens*

Value Education

K. M. Gupta

Overview

The objectives of school education at elementary level aim at enabling the learners to inculcate skills, attitude, values and habits conducive to an all-round development of personality. In order to achieve the objectives, a teacher is expected to make special efforts. He/she is also expected to promote and design the entire teaching-learning process to achieve the objectives.

Value education is planned for the realisation of the objective of the just society. The Constitution of India has provided direction to us for this. The *National Curriculum for Elementary and Secondary Education– A Framework*, developed by the NCERT in 1988, envisaged value education as an integral part of school curriculum. Values to be inculcated among children are drawn from national goal, universal perception, ethical consideration and character-building. The general objectives of education at school level put emphasis on the development of qualities that make a human being socially

Objectives

After completion of the module you will be able to
- know the objectives of value education as integrated in school curriculum;
- enhance awareness and concern of value dimensions in the present living;
- identify the values enshrined in our Constitution;
- provide opportunities to students to practise value; and
- perceive your role as a teacher to inculcate values among students.

effective and happy in various social settings such as friendliness, cooperation, compassion, self-discipline, self-criticism, self-control, humour, courage, love for social justice, etc. The teacher should develop moral and character values such as honesty, truthfulness, dependability, courtesy, fearlessness and compassion. The Committee on Religious and Moral Instruction (1959) defined moral value as 'anything that helps us to behave properly towards others'. The spiritual value is explained as 'anything that takes us out of ourself and inspire us to sacrifice for the good of others or for a great cause'. The school is a place where we have to strive to achieve the objectives of education. In this module efforts have been made to make you aware about the objectives, content and methodology of value education not as a separate subject but as an integral part of the total school curriculum.

Induction Questions

You may ask the following questions:

(i) What are the objectives of school education?
(ii) What are common core components?
(iii) Why is it essential to make education value-oriented?
(iv) What are the sources of values?
(v) What are the values enshrined in the Constitution of India?
(vi) What is the role of teacher in the inculcation of values among students?

School Curriculum at Primary Stage and Identification of Values

The teacher needs to have the knowledge of behavioural objectives of the subject for efficient instruction. The objectives or learning outcomes of teaching of a subject should be in observable and measurable forms. They help the teacher to develop teaching aid and interpret the textbook. As a teacher you ought to know the learning outcomes of the subject you are teaching at school level. The Minimum Levels of Learning at the Primary Stage syllabi including core components developed by the NCERT (1991) contains objectives of teaching different subjects. Objectives related with inculcation of habits, interests, attitude and values he given below.

Language

A child of Class V is expected to have sight vocabulary of 5,000 words in the first language.

The learner should

- develop good habits and attitudes towards reading literature in one's own language such as selecting good books for supplementary reading from among many books available in the school/public libraries; and
- appreciate the beauty of written forms of one's own language such as the use of appropriate words, different expression, styles, etc.

Mathematics

The learner should develop good working habits such as accuracy in performance, arithmetical operations, systematic and orderly approach to solving problems and orderly mastering every operation of the task at hand.

Environmental Studies (Science and Social Studies)

The learner should

- develop norms and modes of behaviour that are consistent with the values enshrined in the Constitution of the country such as democratic way of life, national identity, equal rights and responsibilities, respect for others' religion and ways of life, concern for others and cooperation;

- understand India's rich cultural heritage which is essentially a mixture of many races and people;
- appreciate cultural and ethnic similarities, and differences and diversities, contributions made by Indians belonging to each of the regions, races and speaking different languages;
- understand the need for keeping the body and environment clean, healthy and disease-free;
- develop good and healthy habits for improving one's own quality of life such as maintenance of personal health, care of the eyes, ears, nose, teeth, etc. for prevention and control of accidents and disabilities;
- appreciate the interdependence of man and nature–flora and fauna–and, therefore, the need for protecting and conserving the environment;
- know the basic facts and understand the basic concepts of science through the environment;
- apply the knowledge and concepts, principles, process, methods learned to solve academic and day-to-day life problems for improving the quality of life of individual, the family and the community; and
- develop attitudes and values such as objectivity, precision, critical thinking, goal-oriented, etc.

Work Experience

The learner should develop values such as regularity, punctuality, cooperation, perseverance and honesty.

Creative Arts (Music, Drama, Dance, Rhythm, Arts and Crafts)

The learner should

- participate in performing arts through simple

forms such as rhythmic activities, role plays, folk dances, singing songs, especially those which help in developing patriotism, national identity and integration;
- appreciate art and craft objects prepared or produced by the local artisans and artists; and
- develop pride for the Indian cultural heritage reflected in arts and crafts.

Health and Physical Education

The learner should develop values such as team spirit, cooperation, healthy competitiveness, tolerance, etc.

Activity: Make a list of the following for children from 6 to 11 years: (a) Good habits. (b) Interests, and (c) Values.

MLLs and Values

The report of the committee set up by the Ministry of Human Resource Development on Minimum Levels of Learning (1991) recommended that conscious efforts should be made for the development of non-cognitive areas of learning among children. The committee identified the following key qualities for personal and social growth of children.

(i) *Regularity and Punctuality:* The child is expected to develop a habit of attending the school regularly and on time. Child should learn the value of time in life attending school without coercion or persuasion. If reflected in the behaviour of a child that habit might permeate to other aspect of life.

(ii) *Cleanliness:* The experiences provided to children in the school and home help them to keep the self and environment clean. The habit is manifested in personal behaviour.

(iii) *Industriousness/Diligence:* The child learns to achieve the goal through hard work and perseverance. The task is completed with patience in given time.

(iv) *Sense of Duty and Service:* The child is willing to help voluntarily others. He sacrifices self-interest for the welfare of others. The duty is done with a sense of service.

(v) *Equality:* The child develops a feeling of equality. He does not believe in barriers of caste, creed, language, region, social and economic differences.

(vi) *Cooperation:* The child should understand that life is mutually interdependent. He realises the need of cooperative efforts through appropriate experience of working. The value should be carefully inculcated among children so that independence, individuality and competition with cooperation are maintained.

(vii) *Sense of Responsibility:* The sense of responsibility refers to performing a given task with courage and conviction. Even the difficult task is completed by a child with commitment. The child should have positive self-image and confidence. As a teacher you have to build the positive image among students for the development of the value.

(viii) *Truthfulness:* The child should learn that all his actions are subjected to test on the criterion of truth. He should be truthful in all his dealings. The value is essential to provide legitimacy and authenticity to all the action of an individual.

(ix) *National Identity:* The value of national identity is associated with uniqueness of our nation. The child should develop respect for Indian Constitution. Naturally he will uphold basic values enshrined in our Constitution.

Core Components as Source of Value

Separate content for value education like language, mathematics and environmental studies is not prescribed in the syllabus at elementary level. Virtually any act or experience provided to the learner by you to strengthen sensitivity, feeling and concerns for other serves the purpose of content for value education. Prescription of special course or content will enhance load of the school bag. A separate content for value education will give impression as if other subjects do not provide education in values. The programme for value education should not be considered a separate unit of general education. Therefore, you may conclude that separate content is not required for value education. However, you have to integrate these values while teaching.

As a part of national system of education the National Curricular Framework contains the following core components:

1. The history of India's freedom movement
2. Constitutional obligation
3. Content essential to nurture national identity
4. India's common cultural heritage
5. Egalitarianism, democracy and secularism
6. Equality of sexes
7. Protection of environment
8. Removal of social barriers
9. Observance of the small family norms
10. Inculcation of the scientific temper

As a teacher you have to keep these core components in mind while teaching in the classroom. The knowledge of these core components will help you to sensitise your students in values hidden in them.

Let us identify the content for some of the core components which facilitates the inculcation of values among students.

National Identity

- National Festivals: Republic Day, Independence Day, Gandhi Jayanti

Activity: Collect positive examples of observance of each value by the students. Identify situations in which you practise these values.

- National Anthem
- Life of people in various parts of the country
- Dimensions of our democracy; right to vote, formulation of government
- National symbols
- Stories related to festivals celebrated in the community
- Physical features of our country
- Means of transport and awareness
- India's role in solving world problems
- Non-aligned Movement: Contribution of India

Could you identify a topic which facilitates promotion of national identity among students?

Scientific temper as a value has direct relationship with logical reasoning and knowledge based on scientific method. The practice of superstitions and prejudices need to be reviewed in the light of observations and their verification.

Scientific Temper

- Life stories of our scientists
- Role of inventions in day-to-day life like transistor, television, telephone, etc.
- Relationship between sanitation and diseases
- Importance of correct body position and posture

While it is easy to know about values, it is difficult to put them in practice. The most common habit to clean the hands before taking food is known to all of us. But at many occasions you must have observed your students eating food without cleaning or washing their hands. We should give this knowledge to our students.

Protection of Environment

- Names of plants and trees found in the surrounding
- Importance of plants, water, animals and their interdependence
- Cleanliness of environment
- Natural resources and their conservation
- Care of plants in school garden
- Animals as friends of human being
- Causes of pollution of air and water
- Need of safe handling of drinking water
- Importance of keeping the school and home surroundings clean
- Plantation of trees–Van Mahotsava
- Harmful effects of changes–deforestation, soil erosion, pollution

Similarly, it is essential that we should speak truth. But even adults tell a lie. Speaking truth when no adverse consequences resulting, needs to be practised. Thus, to know a principle, idea, moral, norm, standard, belief is one thing and to practise in real life is another. As a teacher it is your duty to bridge the gap in your behaviour first and then to communicate it to your students.

School Activities for Inculcation of Values

Cocurricular activities help the students to develop values. Participation in these activities provides opportunities and situations to practise values. The values are inculcated effectively and naturally among students. Self-government, morning assembly, debate, sports day, etc. contribute to the development of cooperation and responsibility. Celebration of Gandhi Jayanti and birth anniversaries of great social and religious leaders act as a reinforcer and motivator to follow the ideals. Van Mahotsava promotes our love to plants and so to the environment. The daily morning assembly consists of prayer, thought for the day, news, announcement, complements to the children on their achievement and birthdays

Activity: Make a list of cocurricular activities organised in your school.

and national anthem. The work of art, drama and painting for the decoration of school at various occasion's develops a sense of appreciation.

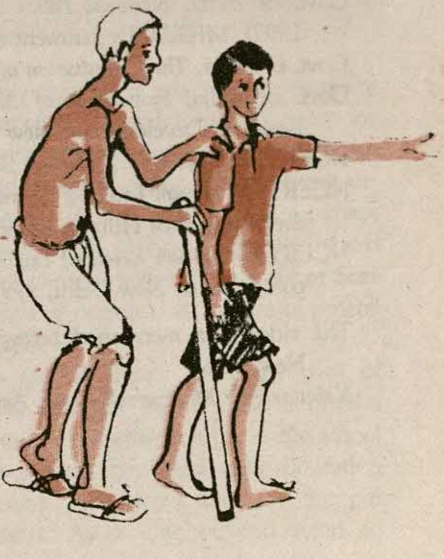
The realisation of the objective of development of values depends upon the organisation of cocurricular activities. The duration of the activities, participation of students, the technique of motivation and facilities–all influence the enthusiasm of the students. These activities should be organised democratically. Efforts should be made to involve maximum number of students. The responsibility should be given to students to express their potential under your guidance.

Method of Inculcation of Values

What is the method of inculcation of values among students? The best method is by setting of examples himself/herself by the teacher. The child automatically imbibes the behaviour pattern of the teacher. The teaching and the bahaviour should be full of values which we wish to develop among children. The negative side of the behaviour should not be reinforced in the school under any circumstances. The knowledge about socially acceptable behaviour should be given to the students. The discussion on behaviour .patterns and activities may be conducted in the classroom or Bal Sabha. This develops habit of listening and speaking. One precaution should be taken here. The values should not be indoctrinated. Role playing activities may also help in developing values. Enacting a drama helps a child to understand the behaviour expected.

Method

- Presentation of examples of self (teacher)
- Discussion
- Dramatisation
- Value clarification



- Exposure to incidents full of values
- Film shows

The value clarification approach may be followed by the teacher with the students to discuss a problem involving value conflict. The process involves answer of the following questions:

(i) Have you chosen value freely?
(ii) Have you selected the value from alternatives?
(iii) Have you weighed the consequences of each alternative?
(iv) Do you cherish the value?
(v) Do you affirm and share the value publicly?
(vi) Will you act on the value now?
(vii) Will you act on the value repeatedly and consistently?

Questions/Assignments

1. Prepare a list of activities (curricular and co-curricular) organised in your school. Identify the values inculcated through these activities.
2. Prepare a list of values. Identify the contents for the inculcation of values.
3. List the functions, community fair, village fair organised in the vicinity. Identify the values developed through these community functions.
4. Make a list of Rights and Duties as given in the Constitution of India. Why has a chapter on 'Duties' been added in the Constitution of India?
5. Discuss the statement 'Right implies Duties'.

Suggested Readings

Govt. of India, *National Policy on Education, 1986* (with modifications undertaken in 1992), MHRD, Department of Education, New Delhi, 1992.

Govt. of India, *The Constitution of India*, Ministry of Law and Justice, New Delhi, 1988.

Govt. of India, *Programme of Action*, Department of Educationm Ministry of Human Resource Development, New Delhi, 1992.

NCERT, *Education in Values–A Source Book*, New Delhi, 1992.

NCERT, *Minimum Levels of Learning at Primary Stage*, Report of the Committee set up by the Ministry of Human Resource Development, New Delhi, 1991.

NCERT, *Minimum Levels of Learning at the Primary Stage*, Syllabi including common core components, New Delhi, 1991.

The video film mentioned below can be used. It is available with the CIET, NCERT, New Delhi.

Kabutar Aur Madhumakkhiyan, Animation, Colour, 8 min. Value: Cooperation

APPENDIX

CONSTITUTION AS A SOURCE OF VALUES

The Preamble to our Constitution is a source of values. It is being reproduced here to understand the fundamental principles embodied in it. It states:

> We, the people of India, having solemnly resolved to constitute India into a Sovereign Socialist Secular Democratic Republic and to secure to all its citizens:
> Justice, Social, economic and political;
> Liberty of thought, expression, belief, faith and worship;
> Equality of status and of opportunity;
> and to promote among them all
> Fraternity assuring the dignity of the individual and unity and integrity of the Nation;
> In our Constituent Assembly this twenty-sixth day of November, 1949, do hereby adopt, enact, and give to ourselves this Constitution.

You may observe the sequence of writing of values in the Preamble. Justice – social, economic and political – is placed at the first place. It is followed by liberty, equality, fraternity and unity and integrity of nation. The Constitution of India as a whole consists of spirit of Preamble. Some of the articles of the Part III Fundamental Rights, Part IV Directive Principles of State Policy and Part IV-A Fundamental Duties are reproduced for discussion.

Our Constitution guarantees to Indian citizen six fundamental rights. These are:

- (i) right to equality
- (ii) right to freedom
- (iii) right against exploitation
- (iv) right to freedom of religion
- (v) cultural and educational rights
- (vi) right to constitutional remedies.

Right to Equality

Equality before law – The State shall not deny to any person equality before the law or the equal protection of the law within the territory of India.

Prohibition of discrimination on grounds of religion, race, caste, sex or place of birth – (i) The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them. (ii) No citizen shall, on grounds only of religion, race, caste, sex or place of birth or any of them, be subject to any disability, liability, restriction or conditions with regard to:

- (a) access to shops, public restaurant, hotels and places of public entertainment; or
- (b) the use of wells, tanks, bathing ghats, roads and places of public resort maintained wholly or partly out of State funds or dedicated to the use of general public.

Above two articles clearly show the path of equality to be followed in our behaviour. As a teacher we need to practise equality in the school and society towards boys and girls. Education should become an effective tool for the girl empowerment. As a teacher you need to enhance self-esteem and self-confidence of girls (POA, 1992).

Right to Freedom

All citizens shall have the right
(i) to freedom of speech and expression
(ii) to assemble peacefully and without arms
(iii) to form associations and unions
(iv) to move freely within the territory of India
(v) to live in any part of India
(vi) to practise any profession, or occupation

Nothing in sub-clause (a) of the clause (i) shall affect the operation of any existing law, or prevent the State from making any law, in so far as such law imposes reasonable restriction on the exercise of the right conferred by the said sub-clause in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency or morality or in relation to contempt of court, defamation or incitement to an offense.

While freedom of speech and expression is guaranteed in the Constitution, a reasonable restriction is put on it. This restriction has put right to freedom as a value. You know that *Satayam Vadam* and *Priyam Vadam*. The expression has been used to promote and establish public order, decency and morality.

Directive Principles of State Policy

The state to secure a social order for the promotion of welfare of people – (1) The State shall strive to promote the welfare of the people by securing and protecting as effectively as it may a social order in which justice, social, economic and political, shall inform all the institutions of the national life. (2) The State shall in particular strive to minimise the inequalities in status, facilities and opportunities, not only amongst individuals but also amongst groups of people residing in different areas or engaged in different vocations.

Equal Justice and free legal aid–The State shall secure that the operation of the legal system promotes justice, on a basis of equal opportunity, and shall in particular, provide free legal aid, by suitable legislation or schemes or in any other way, to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities.

As teachers it is our responsibility to practise the value of justice in the school. In day-to-day functioning of school you should promote justice and eliminate inequality in the behaviour.

Fundamental Duties

Fundamental Duties–It shall be the duty of every citizen of India

(i) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
(ii) to cherish and follow the noble ideals which inspired our national struggle for freedom;
(iii) to uphold and protect the sovereignty, unity and integrity of India;
(iv) to defend the country and render national service when called to do so;
(v) to promote harmony and spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
(vi) to value and preserve the rich heritages of our composite culture;
(vii) to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for creatures;
(viii) to develop scientific temper, humanism and the spirit of inquiry and reform;
(ix) to safeguard public property and to abjure violence;
(x) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement.

As a citizen of India we are expected to carry out the above fundamental duties prescribed in the Constitution. In our teaching process also we should make our students aware about these duties. Can you identify the values hidden in the Fundamental Duties? Compare Fundamental Duties and Core Component of National Curriculum of Elementary and Secondary Level? You will observe some of the common values hidden in them.

Multigrade Teaching

B. R. GOYAL

Overview

As you know that a large number of schools are single teacher schools. This problem has been compounded further because of the topography and geographical conditions such as hilly areas, difficult terrain, desert areas where inhabitations are having sparse population. Provision of regular schools with one teacher and one class in such areas is difficult. Since universalisation of elementary education under Article 45 is a constitutional obligation, and in remote rural areas the size of the student population in the primary schools is very small, it becomes economically non-viable to provide more than one teacher in one school. Multigrade teaching in such schools becomes the only alternative arrangement. In this module, we discuss the concept of multigrade teaching and how it can be organised.

Problems

A view of a cluster of primary schools in a

Objectives

The objectives of this module are to inform the teachers about

- the concept and incidence of multigrade teaching, and the reasons thereof;
- methods to be used by the teacher in multiple classes/multigrade situations.

sparsely populated region reveals how different some schools are from others. Some primary schools are large sized, some are ordinary sized, while some are small ones. In the large ones, teachers teach grade-wise or even section-wise. Sometimes, even two teachers practise team teaching in the same grade by sharing subject teaching. In the small ones, a teacher has to combine several grades.

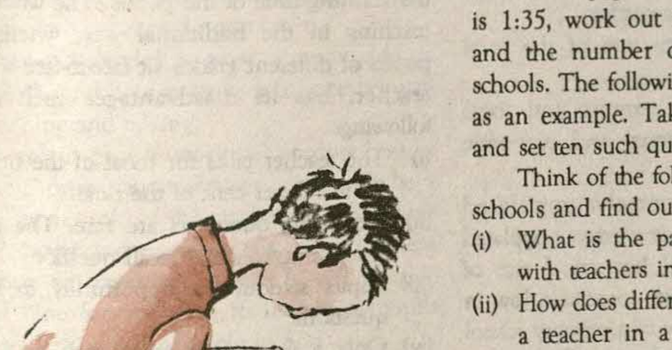
Take some habitations with different population size. Assuming that children of age-group 6-11 years constitute around 15 per cent of the total population and the teacher-pupil ratio is 1:35, work out the likely pupil enrolments and the number of teachers in the primary schools. The following table has been given here as an example. Take a cue from this example and set ten such questions.

Think of the following contexts in your own schools and find out how school situations are:

(i) What is the pattern of grade combination with teachers in two teachers schools?

(ii) How does different grade combinations, with a teacher in a two-teacher school make a difference in the organisation of teaching for the entire day.

(iii) What types of problems do the teacher(s)



Habitations with population size	*Likely pupil enrolment*	*Likely No. of teachers*
2,000	30	4
1,000	73	2
500	35	1
300	20	1

working in schools with multigrade teaching practice face in relation to:

- (a) school organisation and classroom management;
- (b) completion of prescribed courses;
- (c) organisation of activities in subjects like Environmental Studies, Creative Expression, Physical and Health Education;
- (d) organisation of co-curricular activities.

In case the small primary school is not run efficiently what are likely to be the long-term differences in its achievements in comparison to other primary schools with regard to

- progress in the literacy rate of the local population; and
- consciousness in the parents and local community for educational and economic development.

It is likely that sparsely populated inhabitations may continue as sparsely populated for a long time. What will happen if rate of educational progress continues to remain low in such areas? Have an overview of a primary school in remote, sparsely populated areas. Prepare an inventory of problems and possible solutions to these in the context of primary education.

Teaching-Learning Methodologies

If you have a chance to serve as a single teacher in a particular school you might have been confronted with the problems. You might have also adopted your own approach for handling multiple classes/grades. Your methods may or may not have worked. Here we give some practical suggestions, with the help of which you can organise multigrade teaching.

Compare your list with that of other teachers. Discuss how to solve some of these with teachers' own efforts?

Organising Small Group Work

Instead of adopting a centralised teaching role, learning in groups involving face-to-face interaction between pupils-pupils, pupils-teacher, pupils-outsiders is more educative. It helps in increasing the learning time of the pupils. The whole class teaching in the traditional way, wherein the pupils of different grades sit face-to-face with the teacher, has its disadvantages such as the following:

- (i) The teacher talks for most of the time, say 70 to 90 per cent of the time.
- (ii) Reasoning questions are rare. The teacher tends to ask factual recall questions.
- (iii) Pupils seldom get opportunity to initiate questions.
- (iv) Only a few pupils from each grade have the limited opportunity to participate actively.
- (v) Due to pressure of time, pupils are asked to speak briefly in the form of one or two words or a small sentence. It obstructs their creative thought patterns.

If the classroom work is planned in groups, it has advantages such as the following:

- (i) Interactive learning enables pupils to engross themselves in the learning process.
- (ii) The pupils get more incidental opportunities

Problems	*Possible solutions*

to reinforce their previous concepts. The pupils learn to organise their own experiences and thoughts.

In the multigrade teaching situations, the size of each grade is small. Planning teaching-learning in small groups provides a potential learning environment. Its advantages are the following:

(i) Pupils, who generally remain quiet and inactive in the whole class teaching, talk and participate in small groups.
(ii) They can be intiated into their own learning style and thinking aloud.
(iii) They can develop an awareness to compare with each other and improve.
(iv) They can develop a sense of audience and speech, and how to strike a balance between listening and talking.

If small group work is accepted as a classroom organisation strategy, there will be a change in the role of the teacher. It will enable him to cover more pupils and provide them assistance, wherever necessary. He will be able to find time for attending to individual pupils which earlier he was not able to find.

The grouping of pupils should be planned in a flexible way depending upon the nature of the instructional activity. The grouping could be done both in vertical and horizontal combinations. In vertical combination, pupils of different grades are combined. Horizontal grouping is helpful while pupils are engaged in self-study, while vertical combination is useful in peer tutoring, mixed ability group work, etc.

In fact, it is the activity that determines the type of group organisation. Pupils will work effectively in small groups when they find a reason or purpose for such an organisation. It would require explaining to them why they are being grouped, why some pupils are being organised into one group; how the pupils should work together to contribute to each other's learning.

Initially, pupils may find some difficulty in adjusting to group work but gradually they will adjust to it. The following guidelines are offered for planning group work:

(i) Keep all group tasks short while starting.
(ii) There is no need to make a regular group for a long time, keep pupils moving from one group to another.
(iii) There is no need to appoint a group leader for all times, keep group leaders changing to optimise pupil's participation.
(iv) Every pupil should get a chance for leading others in one activity or the other.
(v) Find out the main points of a lesson, paragraph or the main steps of an experiment, explain these to all the groups before asking them to initiate their group work.
(vi) Check with the groups that they know what to do next.
(vii) Keep the size of a group around 4 to 5.
(viii) Seat the different groups in different directions to minimise distraction.
(ix) Do not force pupils in groups without their willing choice. Explain to them the reasons for placing them in a particular small group.
(x) Keep a vigil on all the groups while they are at work.

Dispersal of Instruction

To spread teacher's available time to engage student, the following methodologies are suggested:

(i) Direct teaching
(ii) Monitorial assistance
(iii) Peer tutoring
(iv) Peer group work
(v) Self-study
(vi) Out-of-class room activities (field trips)

(vii) Extended teaching periods
(viii) Supplementary readings
(ix) Making use of community resources
(x) Collective teaching work

The nature of instructional work would differ from subject to subject and even in the context of different topics of the same subject. Some features of each of the methodologies are explained here.

(i) *Direct Teaching:* In a multigrade teaching situation, the teacher cannot afford full time for a single grade. He has to plan his time according to the work load. Only a part of time could be available for direct teaching. The time for direct teaching is of great significance.

Direct teaching should be preceded and followed up by monitorial assistance, peer group work, supervised study, self-study by the pupils.

Use of different types of materials, audio-visual aids and sometimes software quite helps in enhancing the quality of direct teaching.

Direct teaching should start with every new topic and lesson. An overview of the lesson/topic should be presented summarily. Explaining the different sub-activities of the lesson, arousing learner's curiosity, explaining the role of monitors and peers, assigning self-study exercises for reinforcement, all these may be done along with direct teaching.

The teacher should again take to direct teaching for formative evaluation and remedial measures.

(ii) *Monitorial Assistance:* The monitor facilitates the teacher in sharing his work. He/She fills up the gap while the teacher is engaged with other grade(s). There are several dimensions of his/her assistance such as

- to facilitate the teacher on miscellaneous counts;
- to coordinate and organise peer group and individual learning activities;
- to prepare learners for direct teaching;
- to demonstrate the material to the learners;
- to lead the learners in outdoor activities;
- to conduct drills;
- to supervise self-study and work sessions;
- to report to teacher about such pupils who have accomplished the task;
- to maintain discipline and minimise interruption.

The practice of having one all-purpose monitor is not sound. There should be different monitors for different subjects and also for different ability groups. They should be changed according to the situations, watching the degree of receptivity they command. As far as possible monitors should be taken from the same class and not from the senior classes. While selecting monitors, the following aspects may be kept in view:

- Ability to grasp the topic(s)
- Capability of making the peer learners understand the content
- Readiness in seeking concept clarification from the teacher without any hesitation or shyness
- Ability to control group/class
- Ability to prepare the class for learning situations
- Skills for demonstrative teaching
- Temperamental qualities of perseverance, diligence, sympathy, cooperation, leadership, etc.

(iii) Peer Tutoring : Peer tutoring is spontaneous tutoring in one-to-one or even one-to-several pupils teaching situations, i.e. in small group work. It helps in lessening the work load of the teacher and also in facilitating the individual learner in his/her learning. A peer tutor could help his classmates with devotion and attention, as he being the colearner.

Peer tutoring is of several types. Two learners may help each other. In a group, a learner who is high achiever in one subject leads others and like that seeks help from others in the subject of his own deficiency. Sometimes, a peer tutor may be self-appointed to his colearners. For example, if learners are transcribing a particular paragraph in language, and one of the learners faces difficulty in writing a particular word. He finds that his colearner is writing it. So he seeks help on his own. Sometimes, peer tutor of the same grade can be of help.

(iv) *Peer Group Work:* In peer grouping, groups are formed by bringing together bright, average and weak pupils. They help each other. Since, they are of the same age level, they constitute a cohesive group. One learner activates the other.

Peer group leader is chosen by the pupils themselves. Anyone who is considered best in a particular field becomes the leader of the peer group for activities in that field.

The peer group strategy helps in sustaining the interest of the learners. Peer tutoring helps in increasing individual attention of the learners. As tutoring is done in small groups, there is close contact within the group. It helps the learners to progress at their own pace and seek immediate guidance, whenever required.

Peer tutors can provide assistance to teacher on the following aspects:

- Bringing the weak and average learners up to the level of minimum competencies.
- Diagnosing the learning difficulties of the learners and reporting these to the teacher for remedial work.
- Developing a sense of cooperation amongst the learners to help each other in learning.
- Explaining duties and school routine to the peer, wherever essential.
- Giving drill exercise to reinforce certain concepts.
- Helping recitation.
- Activating the rate of learner participation.
- Demonstrating for effective learning.

(v) *Self-study* : Self-study is a potential strategy to keep pupils engaged. It is best suited in the use of self-learning materials. Self-learning materials may be used right from Class I. Children may be given play materials such as toys of different colours and sizes. Different pupils may be given different activities to perform. For example, while some of the pupils match the colours, others collect toys of particular shapes and sizes, while some learn counting. Tracing pictures by using stencil and paper is being done by some others. Arranging pictures on flannel-board to make patterns or a short story can be another activity. Revision for comprehension, drill in language skills, use of assignment cards, etc. are some other self-study activities. Study of books from the library and silent reading is yet another form of self-study. Some exercises can be given for improving pupils' vocabulary in language.

Continuous supervision is needed to keep pupils busy in self-study activities.

(vi) *Out-of-Classroom Activities (Field Trips)* : Field trips help children understand their own environment. These are of help to the teacher in initiating several new activities. Small groups of pupils are made in pursuance of an activity. In field trip activities, pupils are to be guided as how to observe, explore, understand and react to the environment. In such activities, pupils may be led to–(i) observe and record facts and phenomena; (ii) compare notes; (iii) examine pros and cons of opinion; (iv) infer rules, relationships and laws; (v) draw generalisations. The knowledge gained by the pupils may be systematised in House activities by involving children of several classes in discussions.

(vii) *Extended Teaching Period:* Some children have to help their families in domestic and other economic activities. Doing routine homework is a problem to such children. Such children may have to stay back for about an hour after the school timings to do the homework. During this time, pupils of senior classes may help the children of lower classes. This is best done by vertical grouping, taking due care of ability levels. During the same time, the teacher may provide guidance to monitors and peer group leaders for the next day's work.

(viii) *Supplementary Reading Material:* The use of supplementary reading material reinforces pupils' learning. It creates reading interests, introduces variety in reading habits and develops learning habits. The teacher also gets an off from classroom teaching and can attend to non-academic work while children are engaged in supplementary readings.

(ix) *Making Use of Community Resources* : Community participation can be a powerful resource support in multigrade teaching situations. It can be used in different ways. In a rural environment the help of some retired persons, social workers, educated parents in the teaching work can be sought to supplement teachers' efforts. The cooperation of some old students can also be sought. Local expertise in craftsmanship such as a carpenter, blacksmith, weaver and *gramsevak*, etc. could also be utilised. Doctor and other health workers from the Primary Health Centre could be invited to conduct health check-up. Evening games for school children can be arranged with the help of some educated young people of the village.

(x) *Collective Teaching in Multigrade School Situations* : Teaching-learning activities are the means by which teachers bring students into contact with the subject-matter. A teacher uses a variety of activities to engage his students. In normal schools the same strategy of teaching-learning is followed for the whole class. But the multigrade schools have different characteristics than the normal schools. The same teacher engages different grades with different strategies, but for the same subject.

Space and Time Management

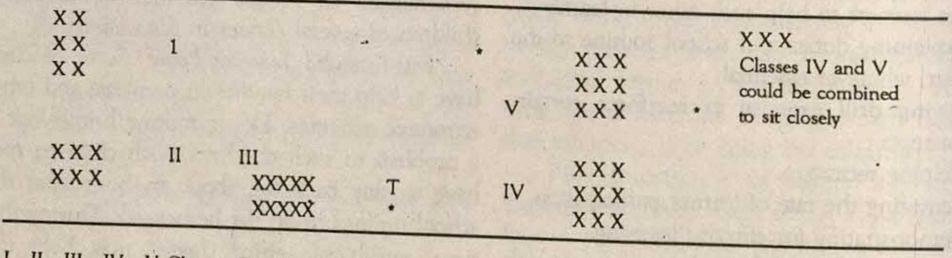
In a multigrade school situation, most of the activities take place in the same classroom involving students of different grades. There are constraints in space, time and resources affecting teaching-learning interactions. For example, when the teacher is teaching pupils of one class, the pupils of other classes get disturbed. In order to avoid this disturbance some patterns of space, time and resources are suggested here.

Space Management: One way to minimise distractions is to try seating arrangements in the same class. The following arrangements are suggested.

Special Note : Here, the teacher is teaching pupils of Class III and the pupils of other classes are busy with the assignment given to them.

Horizontal and Vertical Pattern : Group work is frequently resorted to facilitate follow-up of direct teaching. Groups can be formed in two ways, namely, grouping the students from the same grade and intermixing the grades. Groups

General Pattern



*I II III IV V Classes T = Teacher * Board* of bright, average and weak students should be formed. The group is represented below.

Δ	o	x
Δ	o	Δ
o	o	x
x	x	Δ

x : Bright Same Class
Δ : Weak
o : Average

: ✱ ✱ : ✱ : 0 : 0
: 0 0 : 0 : 0 :
: : 0 : ✱ : ✱
: 0 ✱ : 0 : ✱ :
: : 0 : : 0

✱ Higher Grade
0 Lower Grade

In multigrade situation, the teacher has to cope up with the work load of two or three grades. Naturally, he cannot pay individual attention to all the students. In such situations, vertical pattern could be used by the teacher for some time everyday. The intermixing of the grades could serve the purpose of guidance and remedial work according to the vertical pattern.

The teacher could engage students in self-study by using horizontal pattern.

It would be difficult for the teacher to find equal combinations of good and weak students. Since the purpose of combination is to facilitate self-study and remedial work, the teacher may organise another pattern according to the needs of the situation.

Collective Teaching Pattern: School assembly, games and lectures are some of the activities commonly participated by all grades. For collective activities, the pupils may be seated vertically as shown below.

x o
x o
x o o, x represent
x o different grades
x o
T

House Seating Pattern : There are some collective activities like dramatisation or demonstration that need some wide space. In such situations, the pupils may be seated as below.

o
o o, x represent
o T different grades
o
o
o
x x x x x x

Management of Wall Space : The walls of school building are the part and parcel of the classroom. In multigrade schools, use of walls could be planned in teaching-learning process. The more the writing space, the more will be pupils' participation. Writing space should be all around so that children can learn through rotational teaching, monitorial assistance, self-study and collective activities. The external walls of the classrooms should also be used.

Time Management

Time management is important to enable the teacher to fully engage pupils in activities. The following points are suggested to plan time schedule.

(i) Weekly planing helps more than the day-to-day planning.

(ii) It is not desirable to draw one standard from daily routine.

(iii) The environment of the school should be such as to create a learning climate and to avoid distraction.

(iv) Collective teaching should be planned for the whole year.

(v) Both indoor and outdoor activities should be planned in the time table.

(vi) Teaching for the same subject should be planned at the same time for all grades.

You may also refer to the curriculum of your state about the weightage and make changes, if any. The schedule should be drawn in a way that even with a full work load of 40 hours per week in one teacher school, about 18 hours per week should be devoted to Classes I and II exclusively, and about 22 hours per week for Classes III to V activities. Remaining 9 hours could be for collective teaching, etc.

The following daily schedule is suggested:

Daily Schedule

15 minutes : Cleaning the school environment
15 minutes : Chorus recitation
15 minutes : Roll call, prayer, etc.
15 minutes : Health parade
30 minutes : Collective work
60 minutes : Teaching of mathematics
15 minutes : Break
60 minutes : Teaching of mother tongue
45 minutes : Activities in environment/ social science
30 minutes : Group games/arts/work experience
60 minutes : Extended school hours

Self-doing Exercises

Assume a two-teacher five classes teaching situation.

What points would you keep in view while planning work for

- teaching language to Classes I-III
- teaching Mathematics to Classes III-V
- teaching Environmental Studies to Classes III-V

Write in brief the significance of small group work in day teaching situations. How do you plan it in your own school?

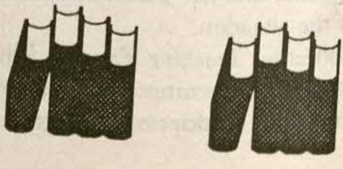
Suggest some activities for collective teaching for Classes III, IV and V on the following topics:

(a) Symbols of freedom and unity
(b) Science in day-to-day life
(c) Leisure time
(d) Personal health and hygiene
(e) Social health and hygiene
(f) National festivals
(g) Good citizen
(h) Great personalities
(i) Saints of India
(j) My India

What is the concept of collective teaching in multigrade school situations ? What are the advantages of collective teaching?

Study the Minimum Levels of Learning for different classes of your school. Identify the common themes for collective teaching in the following subjects :

(a) Language
(b) Mathematics
(c) Environmental Studies



PART II
Performance Package

Teaching of Language

P. K. CHAKRAVORTY

The language teacher plays a major role in helping the children acquire the four basic language skills. Under the circumstances he has to understand his responsibilities and plan his activities efficiently.

The main objectives of language learning at the primary stage, as stated in the Minimum Levels of Learning are to:

- listen with understanding;
- speak effectively in both informal and formal transactions;
- read with comprehension and enjoy reading various kinds of instructional materials;
- write neatly, with logical sequence and creativity;
- comprehend ideas through listening and reading;
- use grammar functionally in various contexts.

Introduction

Language learning occupies an important place in the all-round development of the child. It is through language that the child learns all other subjects in the school. Proper learning of the four basic language skills—listening, speaking, reading and writing—facilitates learning in the other curricular areas.

Objectives

- to make the teacher aware of the different competencies related to different skills of language learning;
- to develop efficiency of the teachers in the teaching-learning process and in the development of the language skills in the students;
- to help the teacher in organising competency-based teaching-learning activities in the class;
- to use the locally available materials for teaching-learning purposes;
- to help the teachers in using dictionaries and encyclopaedias for developing and reinforcing the language skills in the children and developing in them an interest in using them further;
- to develop the skill of evaluating and assessing the different language skills developed in the child;
- to help the teacher in constructing simple tests/tools/techniques for assessing pupil achievement;
- to help the teacher in taking appropriate remedial measures based on the learning gaps that he finds after periodic assessments.

Based upon the Report of MLLs(1991), NCERT

Vetting Group: R.K. CHOPRA, SAVITA VERMA, BRINDA RAMESH

Induction Questions

1. List a few activities which can be organised in the class for development of 'speaking' skill.
2. List a few activites which you have organised for development of 'listening' skill. Please explain them with examples.
3. What are things/aspects that you keep in mind while teaching a prose piece?
4. Give an outline of the aims and specific objectives of any lesson that you teach.
5. What are the questions you generally ask in the class to test comprehension ability or memory?
6. If a child (generally a sharp one) give correct answers to the questions asked in the class, does it mean that most, if not all, the students have understood the lesson properly?

Basic Skills of Language and Suggested Methods for their Development

The four basic language skills–listening, speaking, reading and writing–are interlinked. Therefore, the development of these skills in the child can take place simultaneously. In the initial stage, of course, the child is acquainted with 'listening' and 'speaking skills' but with the introduction of the other two skills–reading and writing, the former two get assimilated with the latter and then onward development of all the four skills go side by side. Besides the above, development of some other language skills such as comprehension, use of functional grammar, self-learning abilities, and growth of vocabulary also occur with the four major skills.

Listening

The major competencies under this skill are as follows.

Competencies	*Class I*	*Class II*	*Class III*	*Class IV*	*Class V*
Listening	Listen with understanding simple, familiar and popular rhymes, poems and tales	Listen with understanding simple but unfamiliar poems, songs and stories	Listen with understanding narrations, descriptions, word-play and riddles	Listen with understanding simple speeches in familiar situations	Listen with understanding recitations, plays and debates during school function or competition
	Understand conversation and dialogues in familiar situations	Understand conversation and dialogues in familiar situation	Understand conversation and dialogues in unfamiliar situations	Understand conversation and dialogues in unfamiliar situations	Understand conversation, dialogues and discussion in unfamiliar situations
	Understand oral requests and simple instructions in familiar situations	Understand oral requests, instructions, commands and questions in familiar situations	Understand oral instructions for playing games, carrying out simple activities	Understand series of oral instructions for performing an activity	Understand instructions for performing a group activity

The following are the problems and issues relating to the listening skill :

- Lack of concentration in listening to what the teacher says in the class.
- The standard form of the target language may not be accessible to the learners due to the influence of the local dialect or regional language.
- The teacher frequently uses local dialect or regional language in the classroom instead of the target language.
- The children lose interest and stop listening to the teacher.

1. Find out the linguistic background of your children.
2. Which dialect has an impact on the listeners' language?

The following are the strategies/activities for developing the listening skill:

1. Development of understanding by listening
2. Learning the correct articulation/pronunciation by repeated listening.
3. Repeated articulation/pronunciation of the sounds/words listened to. In order to develop the listening skill the following activities are suggested :

(a) Give the learner sufficient scope to listen o the target language outside the classroom.

(b) Tell small and interesting stories to the earners with appropriate actions, modulation of oice and gestures so that the learners' interest s aroused and they listen with full attention and oncentration.

While telling these stories, the following oints must be considered:

- The story should be suitable to the age, mental growth and interests of the learners, In the initial stages, the stories should be drawn from familiar situations with which the children are well acquainted.
- The teacher may tell the story himself or may ask a learner to do so. If the learners hesitate to come forward, the teacher may tell a story and then make the children reproduce it.
- The story should be told in a very clear and interesting manner using short sentences and very simple diction.
- The story should not be a very long one.
- Ask brief questions at times while telling the story in order to make sure that the learners are listening with attenction and understanding.

(c) It is natural that the mother tongue or dialect has its maximum influence on the child in the initial stage of schooling. Therefore, the teacher may make judicious use of the mother tongue/regional language/dialect at times in the initial stages of schooling. But this has to be gradually decreased until only the target language is used in the class.

(d) The teacher should recite and make the learners recite rhymes, songs and poems with appropriate stress, intonation, rhythm and actions. At times the teacher may ask very simple questions about the poem in order to make the learners listen with more attention. This helps in developing listening skills.

(e) The teacher may ask the learners, short and simple questions on information and dialogues they have heard on different occasions. This will clarify whether they understand such conversations or not. At times the teacher may ask the learners to make-up dialogues on a given familiar topic.

(f) On occasions, the teacher can give different instructions to the children while they are inside or outside the classroom. The teacher should note whether they carry out his instructions properly or not, in order to test their listening and understanding skill.

A simple learning activity at this stage would be to give the following directions.

1. Collect one leaf, two stones, three flowers, four twings, five books, six pens, etc.
2. Say it again please.
   Clean the board please.
   Pick up that book please.
3. Lift up your right hand.
   Bring me a pencil please, and so on.

Speaking

The major competencies under this skill are as under:

Competencies	*Class I*	*Class II*	*Class III*	*Class IV*	*Class V*
Speaking	Repeat simple sentences correctly	Pronounce all sounds of the language	Speak with correct pronunciation	Speak without stoping unnaturally	Speak fluently and naturally
	Recite simple rhymes, poems and songs in a group with gestures and actions	Recite poems and songs in a group and individually	Narrate simple known stories with proper modulation and action	Recite with proper delivery	Speak on simple known themes
	Answer simple questions requirng Yes/No answers	Answer simple questions requiring full answers	Describe familar things and objects	Describe unfamiliar things and objects	Describe situations and events
	Ask simple questions	Seek informations about familiar things	Ask more complex questions	Take part in simple classroom discussion	Take part in plays, debates and make formal announcements

The following are the problems and issues relating to the speaking skill :

- Defective pronunciation
- Lack of fluency is speaking and reluctance to speak
- Answer in ungrammatical sentences
- Inability to answer in complete sentences

The following are the strategiese/activities for developing the speaking skill.

(a) *Correctness*: Whichever language the learners practise, it should be correct, both grammatically and phonetically (pronunciation). Correct pronunciation can be learnt only through sufficient practice. This aspect should be taken care of right from the beginning lest it becomes a big hurdle when the learner goes to higher classes.

(b) The child should be able to convey his/her thoughts and ideas in a clear and effective manner. Whether in formal or informal situations, the child should be able to make himself understood.

It is not desirable or necessary to use difficult words and involved sentence structures in speech. The tone and pitch of the utterance should suit the situation.

Fluency: Spoken language should have a normal and natural speed and fluency. Stopping unnecessarily or hesitating hampers fluency.

Stress and Tone: While talking to someone or giving a speech, appropriate stress should be given at appropriate places and the tone should be accordingly modulated.

The teacher should aim to make the children learn the language correctly from the very beginnig. When a new language is taught, the mother tongue has an influence on usage and pronunciation. This tendency has to be curbed.

Before they start reading and writing, the students have to be made familiar with the listening and speaking skills. The children should be encouraged to converse in short and simple sentences. Incorrect sentences or pronunciation should be immediately corrected. Questions should be asked on stories or poems in order to make the children speak. The following points should be taken care of while asking questions from the children.

- Questions should be short, simple and clear.
- Repeat the question two or three times, if necessary.
- Questions should follow a proper sequence.
- It takes time for the children to understand the question, think the answer and then enunciate it. The teacher should not show impatience. If a particular child is unable to give a correct answer to a question, another child should be asked the same question. In case the second child too fails to come up with the answer, the teacher may repeat the same question to a third and, if necessary even to a fourth child. In case the majority of the children are unable to answer, the question should be reframed or the teacher should help the children to find out the answer. In no case should the teacher answer the question himself.
- Encourage the children to ask questions.

Besides textual materials, other materials, such as the following may be used to develop this skill.

(a) Picture study–Show a picture to the children and ask them to describe the things shown there. Questions based on the picture may be asked.

(b) Narrating simple stories and personal experiences–Learners may be made to narrate simple stories that they might have heard from someone or they may narrate some personal experiences.

(c) Speech–Once a week or once a month, a few learners may be made to speak for a few minutes on some interesting topic. After the speech, the other children may be asked questions on the speech delivered by the former.

(d) Conversation–Make groups of two to four children. Give some interesting topic to each group and ask them to discuss it.

(e) Role play–Role play may be conducted in the class on some interesting topic. The teacher may help the children with the dialogues, if necessary, e.g. going to a shop, asking for directions, etc.

(f) Pronunciation drill–The teacher will speak out some words or sentences with proper pronunciation and ask the children to repeat them after him.

(g) Jot down the pronunciation mistakes that a child commits while answering a question or speaking on some topics. Do not disturb him or interrupt in the middle. Later on, when the child has finished, correct the mistakes through repeated practice.

Suggested Learning Activity Evaluation

EXEMPLAR

1. Say these words after your teacher : father, mother, brother, sister, teacher farmer, doctor.
2. Recite this poem :

   Mrs Peck Pigeon
   Is picking bread
   Bob, bob bob
   Goes her little round head

3. Say these words after your teacher:

(i)	clear	fear
	cheap	jeep
	chest	Jest
	choke	joke

(ii) put, foot, book, cook, took

Reading

A meaningful interpretation of words and sentences is known as reading. The overall aim of teaching reading is to enable the child to read with comprehension and enjoy reading various kinds of instructional material. The major competencies under this skill are as under:

Competencies	*Class I*	*Class II*	*Class III*	*Class IV*	*Class V*
Reading	Recognise common letters of alphabets in combinations and singly	Recognise infrequent letters and conjunct letters	Read road signs, hoardings and simple notices (as on a notice board)	Read comic, strips and posters	Read simple figures, charts, maps
	Read large print and hand-written on black-boards, flash cards, etc.	Read large and small prints	Read handwriting of other children	Read hand-writing letters	Read print and hand-writing freely
	Read aloud simple known words (of generally not more than three syllables)	Read aloud rhymes, poems, songs and simple stories	Read simple story books and other children's books	Read childrens' magazines	Read news-papers and other printed matter

Problems and Issues Relating to Reading Skill

Some of the problems that the children face in learning this skill are as follows :

- Incorrect pronunciation
- Inability to distinguish between letters having similarity of shape, for example (p,q), (b, d), etc.
- Lack of fluency in reading—stops frequently while reading.

Strategies/Activities for Developing Reading Skill

Reading is an art and efficiency in reading comes only through practice. The more one practises reading, the more efficient he/she becomes in this skill and the more one understands the material read. Success comes only when the child reads with understanding.

In order to overcome problems while trying to develop this skill in the children, the following measures may be taken:

1. *Model Reading*: Model reading by the teacher has its own importance in teaching the children to read properly. The teacher gives a model reading of the lesson in the class and asks the learner to follow his reading before he starts any new lesson. While doing this the teacher should take every care to see that his

own reading is really model reading with appropriate pronunciation, tone and stress, etc.

2. *Corrections*: The teacher should take note of the mistakes that the learners commit while reading aloud and should correct them later on. It is not advisable to interrupt when the learner is reading. Mistakes of pronunciation can be taken up in a separate class and sufficient practice be given.

3. *Practice*: Practice is very important in learning an art. Efficiency and skill can grow only through practice. As such, learners should be given practice in reading aloud. Sufficient practice in reading words and phrases which the children find difficult, should be given time and again.

4. *Comprehension*: Many a time it is found that a learner reads a particular passage very easily and efficiently but does not comprehend the meaning conveyed. There may be different reasons for this, such as lack of interest, insufficient knowledge of vocabulary, difficult sentence construction, etc. These problems have to be tackled from the very beginning and interest in reading has to be cultivated before every reading session.

5. *Extra Readings* : Besides the textbooks, children should be encouraged to read other material like children's books, stories, personal letters, comics, articles, etc.

Things to be Taken Care of

1. See that learners read with confidence and without hesitation.
2. Ensure correct and clear pronunciation of words and sentences.
3. See that the learner reads in an appropriate tone and voice, with proper stress and pauses.
4. Ask questions in the class to ensure that the learners have read with proper understanding (comprehension).
5. Learners should read at an appropriate speed.
6. The pitch and volume of the voice should be related to the number of the listeners and their distance from the person who reads.
7. The voice and tone should be suitable to the content of the material read.
8. The learner should pause at appropriate places.
9. The learner should read with appropriate gestures, actions and correct posture.
10. The learner should make a practice of reading the new vocabulary items again and again in order to remember their pronunciation, meaning and spelling.

These are vocabulary development exercises.

I. Match the phrases with the pictures

1. a packet of biscuits	keys
2. a bunch of keys	clothes
3. a herd of cows	shoes
4. a pair of shoes	cows
5. a bundle of clothes	biscuits

II. If illustrations are not possible use the following exercises.

Fill in the blanks with words listed below.

1. Mr. Tyagi is ill; he is going to buy............from the market.
2. The child was awake in the night, but.............all day.
3. The farmer is sowing..............in the field.
4. The rose has a lovely................
5. Please don't............my mother is ill.

(slept, medicine, smell, seeds, shout.)

These exercises improve spelling.

Fill in the blanks with letters of the alphabets to make names of animals.

–i–er–; -l–ph–nt; b–r; f–x; wol–;

Writing

Writing is written-talk. It means making symbols of certain definite shapes representing spoken sounds.

The major competencies under this skill are as follows :

Competencies	*Class I*	*Class II*	*Class III*	*Class IV*	*Class V*
Writing	Copy consonants, vowels, *matras*, conject letters	Copy words and sentences	Take distinctions of correct shape, sequence, spacing of letters and words	Write neatly and legibly	Write with correct format, spacing, etc.
	Write (from dictation) consonants, vowels, *matras* and conjuct letters	Take simple dictation of known words	Take dictation with unknown words	Take dictation with simple punctuation marks	Take dictation with all punctuation marks
	Write simple familiar words and simple sentences	Write simple guided descriptive sentences	Write guided composition	Write guided composition using paragraphs and punctuations	Write short free compositions including simple informal letters and dialogues

Problems and Issues

Children often tend to ignore the distinguishing features of the letters. This leads to confusion between letters of almost identical shape.

Identify such pairs in your mother tongue which call for special attention.

Strategies/Activities for Developing Writing Skill

Writing is normally done on some surface with some material. This can be with a finger tip on sand spread over some limited surface, with a stylus on bark, palm leaf etc., with a chalk on a slate, with pencil or pen on paper.

Though the last one has largely displaced the earlier alternatives, their pragmatic value in the practice of writing need not be over-looked. Writing with finger tip on sand will result in a sensation, and that probably helps in the process of registering the shape of the letters in the mind.

The size, shape, slant, legibility of the writing–every aspect is important. The size, however, is to be determined in relation to the purpose.

1. All letter figures are combinations of certain components like strokes (horizontal, vertical, circles, semi-circles and slanting). Initially, therefore, train the children to master these strokes.

2. The approach should be from simple to complex. The order of the alphabets need not be the criterion here.

Analyse the alphabets in our mother tongue in terms of shape, simplicity and complexity and suggest an order of teaching.

3. Identify the teaching point for each class (specific alphabets based on Point No. 2) and write them on the blackboard. Draw the attention of the children to the process of their formation–where they begin, how they proceed and which strokes are used to make them. After ensuring proper pronunciation, allow the children to copy them down. While they practise, check the formation process. (Do not discourage left-handers. What is natural to the learner has to be accepted.)

4. At the initial stage, insist on regular transcription work–transcription on model with bold lines first and dotted lines next. Slowly the skill of free copying will develop. Which part of the letter should be confined to the middle column, which should go up and which should come down–these aspects need to be checked meticulously.

5. Lay stress on the vowel symbols, their difference and distinct position when they join the consonants.

6. Proceed from letters to words, progressively increasing the level of difficulty. Take care that the size of the letters is uniform and no space is left in between.

7. Give dictation work frequently mixing up all varieties of words–simple, hard, textual, non-textual, etc.

8. At a later stage, sentences can be introduced giving importance to spacing and punctuation.

9. Later on exercises on free-writing may be introduced. Before free-writing, give sufficient motivation and hints on the topic for writing purposes.

10. Increase the length and difficulty level of such exercises gradually. Guided composition with the help of pictures, free expression on familiar objects from the locality and on imaginary situations, are the different varieties of written work on which work can be taken up gradually.

11. Introduce the children to the features of letter writing. Kindle in them the thrill of receiving and responding to letters. More stress should be laid on the tone and intimacy of the letters than on the format.

Things to be taken care of

- The teacher himself should pronounce words properly and insist that the students should do the same.
- The words and phrases where mistakes occur frequently while writing, should be drilled frequently.
- Design and modify the teaching-learning process in accordance with the feedback received from the students regarding their weak points.
- Design teaching-learning activities/ strategies in order to enable the children to write for different occasions.
- Make the children aware of the progress that they are making day-by-day in this skill. This will encourage them to put in more labour.
- Give sufficient practice in the spelling of words.

Letter Writing Activity

Place the words and phrases from the given box in the proper blanks in the letter.

14, Mall Avenue
24.12.1993

Thank you very much for your...........I was very................to learn that you had enjoyed your........to Goa.

During the................ ....my sister and I went to my grandparents in the village. We had a...........time........................in the fields,

....................lovely food cooked by grandmother and celebrating.................................with friends in the village.

We must arrange to spend the summer holidays together.

With lots of love
Mita

letter; trip; My dear Alka; Lucknow; happy; lovely; Diwali holidays; eating; walking; the festival; Do write soon.

Spelling Exercise

Fill in the blanks with a, e, or o as needed
pl–s–; d — ll; – n – ugh; b–11; 1–m–n.

Comprehension

Comprehension is an important language skill. It is assumed that it occurs naturally with the act of listening or reading. In reality, it is not so. Comprehension doesn't occur on its own; one has to attend to the text (spoken or written material) and engage in cognitive processing of the same. It is only then that one understands or comprehends.

If we accept the above definition of comprehension, we must ponder over the following questions:

1. How much time is really devoted to answering comprehension questions after reading sessions?
2. If a child (generally a sharp one) answers the questions in a class, does it mean that most, if not all, have understood the text?
3. If a child repeats the correct answer given by another student, does it mean that he/she (the repeater) has understood it?
4. Does every child get adequate opportunity in the classroom to practise the mental process of comprehension?
5. What do the questions generally asked in the classroom really test–comprehension, ability or memory?
6. In class tests, the text is not given when the questions from the lessons are asked. What do the questions without text really test–comprehension ability or memory?
7. What proportion of students even after having read the textbooks can answer correctly the comprehension questions based on the text of a newspaper or a magazine story of similar difficulty level? Do we ever care to think about this?

The Problems

The problems related to developing comprehension skills can now be stated clearly as below:

(i) We, the teachers generally do not devote adequate time to it.
(ii) We are generally satisfied if one child answers questions in the class assuming that the others have understood or will understand the meaning. This does not happen.
(iii) We generally test memory and not comprehension.

The Competencies under this Skill

Comprehension is a receptive act of mind and, therefore, can't be observed. We can't see what is going on in the minds of children when they read or listen. The only thing we can do is to ask some questions and infer the level of comprehension.

The competencies suggested in the MLLs at the primary stage can be re-stated as below.

Competencies	*Class I*	*Class II*	*Class III*	*Class IV*	*Class V*
Comprehension of ideas (through listening and reading)	Recall simple information given in a short spoken text	Recall sequences of events in a short spoken or written text	Locate main ideas in a spoken or written text	Recognise simple cause-and-effect relationship between ideas and events in a spoken or written text	Make inferences from the information given in a spoken or written text
	After listening be able to answer questions of 'who' 'when' and 'where'	After listening be able to answer questions of 'what' and 'how'	After listening or reading a text be able to answer questions of 'why'	After listening or reading a text, be able to answer questions using 'because', 'since'	After listening or reading a text, be able to answer and question using 'if.....then' and 'if not....then'

Do you agree with the sequence in the above table? You may differ. The sequence is yet to be tested empirically: Recall your experiences and collate and discuss with colleagues.

Dimensions

Comprehension is a complex act of the human mind. It, therefore, requires to be understood in its various dimensions.

As stated above, comprehension ability cannot be observed directly. It can only be *inferred* from the responses *to questions or tasks* after reading or listening to a text. The act of comprehension, therefore, essentially involves two activities : (i) reading/listening to a *text*; and (ii) responding to *questions or tasks*. Of course, between the two lies the real mental act of comprehension. These are then the two dimensions of comprehension. Let us discuss and understand their nature and scope.

Text Dimension

In the classroom situation, the text dimension is generally confused with, or limited to, the textbook only. But it is beyond the textbook that real life situations exist for comprehension. Whenever we hear 'something; listen to it purposefully, that 'something' becomes the 'text'; be it a joke or an instruction for marketing or a story. Similarly, in the case of reading a poster or a handbill becomes the text.

List below the textual material that children find in their environment for

(1) Listening	(2) Reading
________	________
________	________
________	________
________	________

The above is the 'type' dimension of the text. Besides, it is the 'difficulty' dimension because the texts vary in difficulty level–some are easy, others are not, still some others very difficult. Basically, there seem to be three factors which determine difficulty level.

(i) Diction, i.e. the choice of words in the texts (familiar/unfamiliar; easy/difficult)

(ii) Syntax, i.e. the choice of sentence structures in the text, (simple/ compound/complex; small/long)

(iii) Style, i.e. the choice of expression in the text (simple complete statements/ elliptical or incomplete statements/ idiomatic/figural language/humour)

Students should be helped to learn the skills of comprehension on all these dimensions in an increasing order of difficulty. Grading exercises according to difficulty is certainly a challenging job and some teachers do take this challenge bravely and intelligently. Others will certainly require guidance in this regard and it is for that purpose that *textbooks are prepared.* The textbooks are intended to present a 'series of texts' in graded order of difficulty. The textbook is not an end in itself; it simply contains exemplars of materials. The teachers should find time to locate other textual material of similar nature from the environment and encourage the students to read or listen to it for comprehension practice.

Task/Question Dimension

The tasks and questions required for assessing comprehension are again many. We do not read or listen without a purpose; purpose is always there.

What are the various purposes of reading or listening to a text? We do it for *locating information/main ideas,* making out *sequence* of events/idea recognising relationships, *inferring* moods, intention, motive, etc. These are the tasks of cognitive processing.

The basic questions asked for comprehension are 'what' 'when' 'where' 'which' 'who' 'how' and 'why'. But that is only on the surface. Questions can differ as regards difficulty and complexity. We have *simple questions* which can be answered on the basis of reading a sing' sentence and we have *complex questions* which require for their answers a reading of more than one sentence. The more the number of sentences required to be read in order to respond, the more complex is the question.

Also, the questions may be direct or indirect. If the question can be answered using the vocabulary and sentence structure from the text, it is a *direct* question. If it asks for a response in different language the question becomes *indirect,* and so difficult.

Strategies/Action Points

In consideration of the features discussed above, a teacher is required to adopt strategies very carefully for developing comprehension-skills among learners. These include the following:

(i) Read, and train the students in reading the text aloud with proper *pause, stress* and *intonation.* Usually, we spend time on pronunciation alone. Half of this time, whether each day or on alternate days, must be devoted to training in pauses, stress and intonation. This training helps a great deal in comprehension.

(ii) Use the *silent reading* technique with a declared *purpose.* Once the children master oral reading, in/around Class III, they can learn profitably from silent reading. All silent reading must be motivated to a particular purpose. Do we ever read (study) without a clear, specific purpose in our minds? So assign the students some definite task before asking them to read silently. These tasks may include:

- identifying the main points
- making out the sequence of events
- describing the process
- identifying the relationships/features/ adjectives, causes, etc.
- inferring the mood/motive, etc.

(iii) Ask a number of questions in order to ensure comprehension among all children.

(iv) *Do not overuse* the method of asking simple and direct questions which can be answered by the child by reading one or two sentences only. Such questions are suitable in the early classes, say Classes I through III. At the late primary stage, i.e. in Classes IV and V, such questions should be used only rarely as cues for more complete answers.

(v) Ask questions from average and below average students also; never be satisfied with responses from the more advanced students only. If they do not answer or answer incorrectly, redirecting the question to another student is of no use. They would simply listen to the correct answer without understanding it. Insist that each child answers questions. In some cases, you may have to break up the question into a series of simple and direct questions or even provide cues. But let the child exercise his own thinking ability and answer. This will build self-confidence in the child as well as help other below average children. This process slows down the pace of the lesson and chances of comprehension among all children increase.

(vi) Train the students in framing questions after reading or listening to a text. It would be fun for them if they are encouraged to ask questions while the teacher or other students answer them. Practice in framing questions promotes insight into the text.

(vii) Wherever a text contains pronouns or demonstrative adjectives in complex sentences, *always ask* the children to what the pronoun refers. The use of referents makes a text difficult.

(viii) Whenever a text contains elliptical/incomplete statements, ask the students to complete them.

(ix) Wherever a text contains idiomatic or figurative expressions, ask the students to paraphrase them.

(x) Always allow students sufficient time to think after the question is posed. The mental act of comprehension does take some time – it may be a second for a sharp child and a minute for a weak child. But *never* dictate the answer or indicate it in the text because it will encourage cramming at the cost of thinking.

(xi) Besides questions and tasks mentioned above, another interesting and challenging task for comprehension is a 'cloze' task. A 'cloze' passage is a passage in which some words from the text are missing and are substituted by blanks in a definite order–perhaps every tenth word of the text, for example. The child read the incomplete 'cloze' text for meaning and supplies words for the blanks. Such texts may be occasionally prepared by the teacher and administered to the class. In Classes IV and V, the students may be motivated to prepare such passages among themselves.

(xii) Beyond these tasks and questions, comprehension lessons require 'control over vocabulary'. When new and difficult words are encountered, generally the teachers give their meaning. A better strategy may be to develop the children's ability in word-analysis and in using the dictionary. Dictionaries are available for children and these should be introduced in the classroom. Occasionally, ask the students to find meanings of words from the dictionary–locating the word, noting various meanings and selecting the appropriate one. The use of dictionary may be introduced in Class IV or V.

Functional Grammar

The major competencies under this sub-skill are as follows.

Competencies	*Class I*	*Class II*	*Class III*	*Class IV*	*Class V*
Functional Grammar	Become aware of similarities between words on the basis of word ending	Become aware of similarities between words on the basis of word beginning, word ending and word roots (prefixes, suffixes and word stems)	Become aware of meaning relationship between words	Understand simple functional rules of sentence construction	Understand simple functional rules of parts of speech

Problems and Issues Relating to this Skill

Unable to understand/remember the functional rules of sentence formation and the interrelationship between words in the sentences.

Activity

Write the following sentences on the black-board.

Ram kicked the ball.
Madan saw a black cat.

Ask the following questions to find out the 'subject' and the 'verb', in the above two sentences and write the learner's answers on the blackboard.

What did Ram kick?
What did Madan see?

Teaching Strategy

Explain to the children that the 'doer' of an action in the sentence is the subject. The 'action' is the 'verb' and the thing on which the effect of the action falls is the object in the sentence. To find out the subject we need to put questions such as 'what', 'who', etc. to the verb.

Also, draw the attention of the children towards the sequence of the words put in the sentence.

Self-learning

There are mainly two measurers for acquainting the children with picture encyclopaedias and dictionaries.

- Increase the vocabulary and increase knowledge about the word meaning.

Major competencies under this skill are given below :

The following are some of the problems and

Competencies	*Class I*	*Class II*	*Class III*	*Class IV*	*Class V*
Self-learning	Be able to use simple picture glossary, where available	Be able to use simple picture encylopaedia, where available	Be able to use children's illustrated dictionary, where available	Be able to use junior dictionary, where available	Be able to use junior encyclopaedia, where available

issues relating to the skill of self-learning.

- Poor stock of vocabulary
- Lack of knowledge of word meanings

Strategies/Activities for Development of this Skill

- Sort out some words from the texts. Call each child individually and ask him/her to find out the meaning of a word from the dictionary.
- Whenever a dictionary is not available the teacher can prepare a list of words and put their meanings haphazardly on the other side and then ask the children one by one to associate the words with their meanings.
- Make a collection of words and ask the children to put them in order as they would appear in a dictionary.

Language Use

The main competencies under this skill are as under:

Competencies	*Class I*	*Class II*	*Class III*	*Class IV*	*Class V*
Language use	Understand and use simple, polite formulas	Speak politely and be attentive while listening	Take turn while speaking in group	Learn about difference between formal and informal language	Use appropriate language in formal and informal situations

Strategies/Activities for developing this skill are as under

To acquaint the children with simple polite language and to teach them the use and difference between formal and informal language, teacher has to cite a number of examples in the class and teach their use through classroom situations.

Situations encountered by the children outside the classroom, at home, in the playground, on the road or at family meetings may be recreated in the classroom and the students may be asked to enact the situations using appropriate language in their dialogues.

Vocabulary Control

While learning the different skills of language in the classroom and outside, children also learn the meaning and usage of many words. This increases their vocabulary.

The major competencies under this skill are as under:

Competencies	*Class I*	*Class II*	*Class III*	*Class IV*	*Class V*
Vocabulary control	Be able to acquire reading comprehension vocabulary of approx. 1,500 words	Be able to acquire reading comprehension vocabulary of approx. 2,000 words	Be able to acquire reading comprehension vocabulary of approx. 3,000 words	Be able to acquire reading comprehension vocabulary of approx. 4,000 words	Be able to acquire reading comprehension vocabulary of approx. 5,000 words

Some of the problems and issues relating to this skill are given below.

- Children experience much difficulty in reading and understanding of textual material prescribed for their class.

- Inability to stock a large vocabulary.

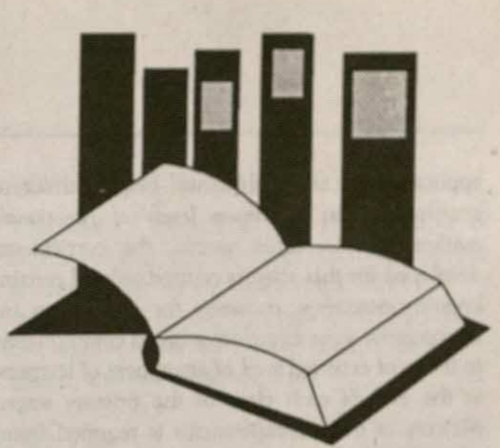
Strategies/activities for development this skill are as under :

- The teacher has to encourage the children to borrow books from the library and read them. The teacher himself may bring books from the library which will be interesting to the children and distribute them amongs children.
- Children may be encouraged to write down the meanings of all the unknown words which they encounter, in a notebook of their own. They may be encouraged to use such noted down words in their speech and writing as often as possible.

The vocabulary of the children has to be increased through other materials like dictionaries, children's magazines and periodicals, story books, supplementary reading material, etc. besides the prescribed textual material.

Teaching of Mathematics : Concepts and Strategies

V. P. GUPTA, I. K. BANSAL



Introduction

In this era of science and technology, a strong base of mathematics education for all is considered an absolute necessity. Mathematics is necessary to train a child to *think, reason, analyse* and *articulate logically*. Apart from this, it is treated as a *concomitant to any subject involving analysis and reasoning*. It is for this reason that mathematics has been accepted as an integral part of general education up to secondary stage of education and a compulsory subject of study for all. It is utmost important to plan and implement curricula of mathematics at various stages of school education carefully. It is the curriculum and the mode of instruction which largely determine whether a student would develop love or hatred for the subject in later years.

(i) *Minimum Levels of Learning*

At the primary stage, the curriculum of mathematics has been developed so as to help children develop understanding of key mathematical concepts through appropriate learning experiences with things from the physical world and the immediate environment. The child at this stage is not to be loaded with a heavy curriculum, because this may stunt his faculties and kill his interest irretrievably. It is more so, as the large number of first generation learners belonging to disadvantaged sections of the society come in the fold of primary stage education. In the primary stage curriculum, only key mathematical competencies have been listed to include the most essential concepts and

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Vetting Group : N.M. RAO, K.L. ARYA, K. DORASWAMI, V.P. GUPTA, I.K. BANSAL, R.C. UPADHYAYA, (SMT.) S. SHARDA applications of skills which will help all children acquire certain *minimum levels of functional mathematics*. In other words, the curriculum developed for this stage is centred around certain learning outcomes, common for all learners in the country, so as to ensure a broad commonality in terms of expected level of attainment of learners at the end of each class of the primary stage. Mastery of these competencies is required from each child as it will help children at present and in their later life to apply mathematical concepts and skills to solve problems related to daily life.

(ii) *Teaching-learning Strategies*

In order to achieve the best of the results, the experiential approach in the teaching and learning of mathematics is considered the best. Experiential learning enable children to find pleasure and excitement in the study of mathematics.

Mathematics is a subject which manipulates elements, most of which are abstract. This makes mathematics a little more difficult to teach as well as to learn. Concrete/semi-concrete materials are effective means to develop mathematical concepts and skills. Their use helps children to understand the underlying structures and principles of mathematical concepts and skills. As children go through the process of manipulating or putting together concrete materials, mathematics becomes more meaningful to them and their learning becomes more permanent. Use of material also provide them an opportunity to explore new ideas and find ways of solving problems. In the process of using material, they also get the opportunity to find various kinds of mathematical relationships. The sense of achievement, in turn, promotes interest in the learning of mathematics.

(iii) *Use of Concrete Material and Experiences*

There is a wide range of material available in and outside the school environment that can be used in the teaching-learning process. Unfortunately, in most of the schools at present the teacher depends mainly on the prescribed textbooks. There could be a number of limitations on the part of the teachers. One such limitation could be non-availability of material to be used in the teaching-learning process. Even when such materials are available, teachers may not be equipped with the skill of using materials in the teaching-learning process. A need, therefore, was felt that each school must be provided with some material and the teachers br given orientation in using the material in day-to-day teaching and providing more and more experience for using the locally available material.

Mathematics Kit provided to schools under the scheme 'Operation Blackboard' was an attempt in this direction. The kit consists of seven items, namely, Dominoes, Cuisenaire Strips, Cubic Rods, Spike Abacus, Fraction Disc, Napier Strips and Solids. In order to help and provide guidance to primary school teachers and teacher-educators in making use of the kit, so as to facilitate effective and efficient learning of certain mathematical concepts by children, a manual has been provided. In this manual, each item of the kit has been described in detail. A large number of activities, that can be performed by using these items, have been suggested therein.

(iv) *Evaluation*

As stated earlier, the broad objectives of teaching mathematics at the primary stage are to promote understanding of the mathematical concepts and to develop adequate skills in using these concepts. This envisages a shift in emphasis on evaluation techniques and processes. At present most of the evaluation procedures centre primarily around the acquisition of skills tested through what is generally referred to as a paper-pencil test. The present emphasis on promoting understanding of the mathematical concepts and their application to solve problems, brings into focus the need to evaluate performance of children on the basis of daily observations, to assess their ability to tackle new (unfamiliar) problems with the power of reasoning and seek and develop concepts for himself/herself. In other words, it is necessary to recognise and give credit to those children who are able to tackle such problems on their own.

In the earlier two classes, i.e. Classes I and II, the technique of oral testing is desirable. The attainment of various learning outcomes identified for this stage can be evaluated more effectively through oral testing. In other three classes, i.e. Classes III to V, both the techniques of oral testing and written testing have to be employed. Besides oral and written testing, evaluation techniques using manipulative material, play-way activities, games, puzzles, riddles, etc. are also considered to be effective. Whatsoever techniques of evaluation are selected, evaluation should seek to evaluate, what has been learnt and what has not been learnt. The emphasis should be on helping each child to attain the Minimum Levels of Learning (MLLs). In case of those who have not mastered the MLLs, the teacher should provide remedial assistance to help them attain the desired levels of learning. For the guidance of teachers, some guidelines for evaluating pupils' performance, particularly in Classes III, IV and V have been prepared by the Department of Pre-School and Elementary Education, NCERT. While, evaluating the child's performance in respect of MLLs, emphasis should be laid on the process of learning along with the product of learning.

Teaching-learning Strategies

This section intends to provide a sample of desirable and appropriate teaching-learning strategies for some important concepts of mathematics. The two concepts which have been discussed herein are place value/numeration system, and fractional numbers.

Place Value

Main Ideas:

(i) System of numeration based upon grouping in tens;
(ii) Place value of a digit in a numeral;
(iii) Extension of place value concept to decimals and system of measurement.

Strategies: The concept of place value in fact, is introduced soon after the child has learnt to count up to 10. The numbers are extended beyond 10, only by using the concept of place value, though in an informal and intuitive manner.

Activity: The teacher may use any of the locally available materials like pebbles, beads, sticks, pencils, seeds, etc.

1. In order to follow the participatory approach, the class may be divided into groups of 4-5 children. Collection of pebbles (beads or seeds) containing 20 pebbles each, may be kept in front of each group in the classroom. One member from each group may be asked to pick up some pebbles from the collection. The teacher should go round the class to make sure that every group has chosen more than 10 pebbles. Now all the groups may count the number of pebbles they have collected. The children have to write down the number of pebbles in their notebooks..

Objectives

The purpose of this module is to acquaint the teachers with

- the genesis of the mathematics curriculum suggested for the primary stage of education;
- the teaching-learing strategies based on child-centred and activity-oriented approach;
- procedure for evaluating the child's learning vis-a-vis MLLs.

For example, the number of pebbles is 15, as shown below:

0 0 0 0 0
0 0 0 0 0
0 0 0 0 0

Now a child from the group may be asked to arrange the pebbles in group of tens and ones. The arrangement should be:

0000000000 00000
Tens (1) Singles (5)

Now each child of the group will draw the figure in his/her notebook and write down the number of tens and ones. For example:

000000000 00000
Tens Ones
1 5

The teacher should ask the children to observe the number written earlier and the number of tens and ones written now. The children will find that the number 15 is the same as 1 ten and 5 ones.

This activity may be repeated till every child in the group gets a chance of selecting the pebbles, counting them and arranging them in the groups of tens and ones. The teacher should insist that every time they should write down the end result.

$\boxed{17}$ is $\boxed{1}$ Ten and $\boxed{7}$ Ones
$\boxed{12}$ is $\boxed{1}$ Ten and $\boxed{2}$ Ones
$\boxed{10}$ is $\boxed{1}$ Ten and $\boxed{0}$ Ones
$\boxed{9}$ is $\boxed{0}$ Ten and $\boxed{9}$ Ones

For the purpose of the consolidation of this idea, the above activity may be undertaken in the form of a game.

Game: The class is divided into two groups. One group writes any number up to 20 on the blackboard. The other group will collect the number of pebbles indicated on the board, arrange them in tens and ones and then write the same on the blackborad. For example:

First group writes: 18

The second group will write:

Tens Ones
1 8

This game can be repeated in reverse order. Here, one group will write the number of tens and ones on the blackboard. Other group will collect the number of pebbles as per tens and ones, put them together and count the total number of pebbles for writing the total number of pebbles on the blackboard. For example:

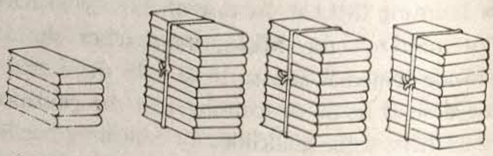
First group writes:

Tens Ones
1 3

The second group will write: 13

This game may be repeated till the teacher is satisfied that each child of the class recognises the place value of each digit in the given numeral.

2. Display some objects, for instance, notebooks as under and ask how many notebooks are there.



The children may come out with two answers. Some may say 35 and some may say 3 groups of tens each and 5 more. Draw their attention to the matching:

35–3 groups of tens and 5 more

3. Repeat the activity by taking some more examples using concrete objects. Encourage the children to count the number of objects in the collection given to them and present the answer in two different ways, as mentioned earlier.

4. Now, help the children to learn that in the numeral, say 23, the digit 2 represents 2 tens and the digit 3 represents 3 ones. Similarly,

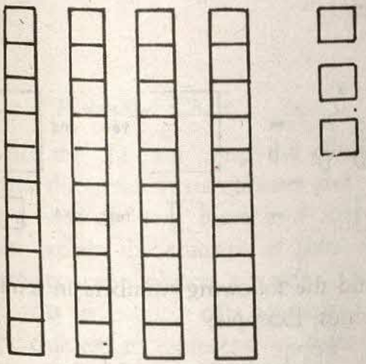
in the numeral 35, the digit 3 represents 3 tens and the digit 5 represents 5 ones.

Allow the children to realise that it is easier to find the number of objects in a collection when the objects are grouped in tens. Also, allow them to observe the different ways of grouping the objects in tens and then to determine the number of objects in a collection, as shown below.

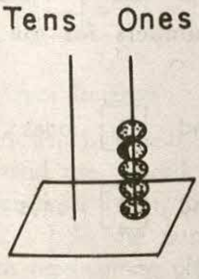
(i) Beads arranged in rows.

0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
4 Tens 3 Ones

(ii) Strips of 10 squares



For example, the 1-digit numerals 5, 6 and 9 are represented as:



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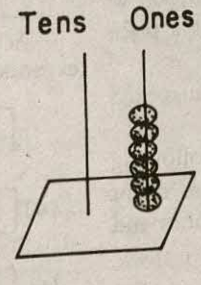

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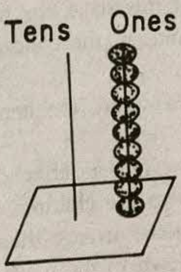

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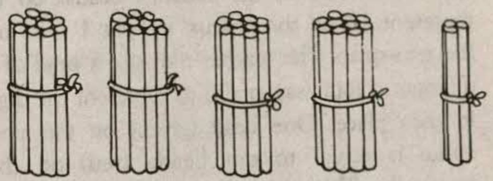
(iii) Sticks tied in bundles



(iv) A hundred board

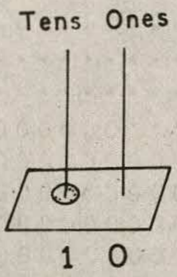
* * * * * * * * * *
* * * * * * * * * *
* * * * * * * * * * 4 Tens
* * * * * * * * * *
* * * 0 0 0 0 0 0 0 3 Ones
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0

Additional Activity (Use of Spike Abacus)

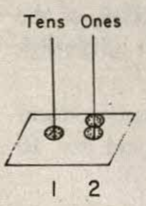
The teacher should demonstrate the meaning of 1-digit numerals, using the spike-abacus, which is available in OB Mathematics Kit.

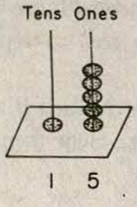
The teacher should use the beads of the same colour (say red) to represent single-digit numbers.

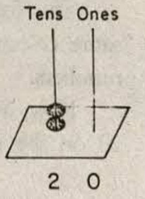
Now, ask the children if they can represent 10 on the abacus. Help them to find that 10 beads cannot be held by the ones-spike, the ones-spike can hold at the most 9 beads. So to represent 10 on the abacus, we put 1 bead on the tens-spike. The teacher may use a bead of a different colour (say green) to represent the digit in tens place. One bead (green) on the tens-spike is equal to ten beads (red) on the ones-spike. Thus, 10 will be represented on the abacus as



Following this, ask the children to demonstrate, one by one, how the 2-digit numerals from 11 to 20 are represented on the abacus.







At this stage, the teacher should explain to the children, the concept of zero (0) as a place holder.

For evaluation, the items may be as suggested below:

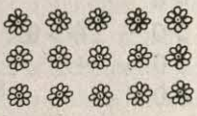
1. The teacher can give the following objects to the children and ask them to count the objects, arrange them in tens and ones and write down in the space provided.

Example: Marbles

o o o
o o o o o = o o o o o and o o
o o o o   o o o o o

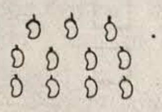
$\boxed{12}$ = $\boxed{1}$ ten and $\boxed{2}$ Ones

(a) Flowers

 = ☐ ten and ☐ Ones

☐ = ☐ ten and ☐ Ones

(b) Mangoes

 = ☐ ten and ☐ Ones

☐ = ☐ ten and ☐ Ones

2. Expand the following numbers in terms of tens and ones; Example:

$\boxed{13}$ is $\boxed{1}$ tens and $\boxed{3}$ Ones

$\boxed{16}$ is ☐ tens and ☐ Ones

$\boxed{18}$ is ☐ tens and ☐ Ones

$\boxed{11}$ is ☐ tens and ☐ Ones

3. Write the numbers for the given expanded forms.

$\boxed{1}$ ten and $\boxed{7}$ ones is $\boxed{17}$

(a) $\boxed{1}$ ten and $\boxed{5}$ ones is ☐

(b) $\boxed{1}$ ten and $\boxed{9}$ ones is ☐

(c) $\boxed{1}$ ten and $\boxed{4}$ ones is ☐

4. Indicate, what does the encircled digit in the numbers represent–tens or ones.

Example:

②9 2 tens

(a) 3⑦ 7 – –

(b) ⑨2 9 – –

(c) ①0 1 – –

(d) 3③ 3 – –

Use of Place-value Chart

Once the children grasp the concept of place-value through concrete objects and abacus, there is a need to bring them to a stage where they can explain the concept of place–values, using semi–concrete objects or aids. The place-value chart is an example of a semi-concrete aid. Help the children to represent one-digit and two-digit numerals, using the place-value chart. For example, the numerals 7, 9, 10, 53 and 69 are represented as:

Tens (10)	Ones (1)
	7

Tens (10)	Ones (1)
	9

Tens (10)	Ones (1)
1	0

Tens (10)	Ones (1)
5	3

Tens (10)	Ones (1)
6	9

Use of Open Sentences

An aid which would help the children to understand the concept of place–value at the abstract level is an open sentence. Open sentences help the pupils to bridge the gap between representing place-value with materials and representing place-value symbolically. For example,

24 = 20 + 4
56 = 50 + 6

Let the children fill in the boxes:

86 = ☐ + 6
76 = 70 + ☐
90 = 90 + ☐
43 = ☐ + 3

Allow the children to observe the places of digits 3 and 7 in the numeral 73. The digits 3 and 7 occupy different places. The digit 7 occupies the tens place whose place-value is 10; and the digit 3 occupies ones place whose place-value is 1. Thus, in the numeral 73, the place-value of 7 is 7 × 10 or 70 and the place-value of 3 is 3 × 1 or 3.

Let the children observe that both the numerals 37 and 73 are formed by the same digits 3 and 7, but the place-values of 7 or 3 of the two numerals are not the same.

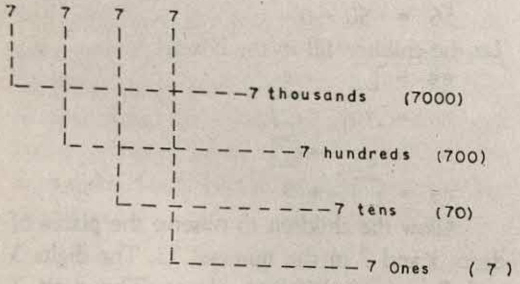
Extension of Place-value to Large Numbers

Prepare spike-abacuses having more than 2 spikes, and place-value charts having more than 2 columns. Extend the concept of place-value to large numbers, following the strategies suggested above.

Extension of Place-value to Decimals

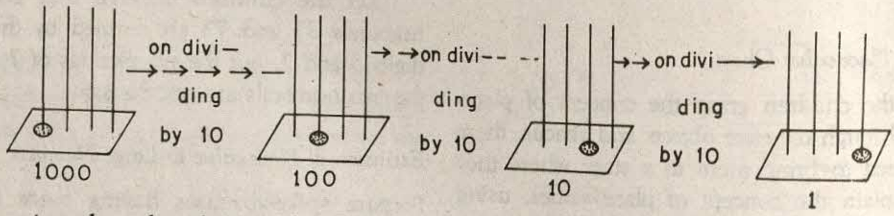
Help the children to review the concept of place-value of a digit in a numeral. Help them to understand that the place-value of a digit becomes 10 times greater as it moves from right to left by one place. For example, place-value of 4 in 54 is 4, whereas the place-value of 4 in 45 is 40. Its place-value becomes 100 times as it moves from right to left by two places, and so on.

This may be followed by the learning of the fact that the place-value of a digit becomes one-tenth (1/10) as the digit moves from left to right by one place; becomes one-hundredth (1/100) as the digit moves from left to right by two places, and so on. For example.



Allow the children to observe that when the digit moves to the right, its place-value is obtained by dividing the previous place-value by 10.

Draw the attention of the children to the following diagrams:



Now introduce the place to the just right of the ones place as the 'tenths place' and its value as 1/10. In the same way, introduce the place to the right of the tenths place as a 'hundredths place' with value 1/100, and so on. Explain now the concept of the decimal as another way of representing the fractional number. Help the children to appreciate the use of decimals over the fractions.

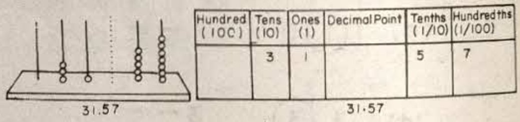
Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
1000	100	10	1	1/10	1/100	1/1000

An aid consisting of the following may help the children to understand the concept further.

(i) one large square of size 10 cm × 10 cm
(ii) ten rectangualr strips of size 1 cm × 10 cm
(iii) hundred small squares of size 1 cm × 1 cm

If the large square represents 1, each rectangular strip will represent 1/10 or 0.1, and each small square will represent 1/100 or 0.01. If 1 is represented by one rectangular strip, the small square will represent 1/10 or 0.1 and the large square will represent 10.

The spike-abacus and the place-value chart may be suitably modified to represent the decimals. Allow the children to represent the decimals on them. For example, 31.57 is represented as:

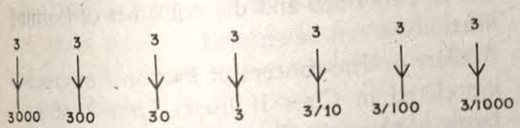


With the help of the figure given below, explain that the ones place is basic in identifying the position of a digit in a numeral.

For example, in 134.56, the digit 4 is at the ones place. The digit 3 is just on the left of the ones place, i.e. tens place and the digit 5 just on the right of the ones place–is in the tenths place. Similarly, the digits 1 and 6 are at equal distances from ones place but in opposite directions. The digit 1 is at the hundreds place and the digit 6 is at the hundredths place.

Help the pupils to discover the relationship between the place-values of a digit when it occupies different places.

For example



System of Measurement

The internationally accepted system of measurement is called 'Metric System' of weights and measures. It is a decimal system and the computation is done just like the numeration system. The relationship between various units and sub-units is as follows:

(It conforms to the place-value table/chart)

Thousands (1000) kilo	Hundreds (100) hecta	Tens (10) deka	Ones (1) gram litre metre	Tenths (0.1) deci	Hundredths (0.01) centi	Thousandths (0.001) milli

By using this chart, pupils can learn conversion of one unit into another unit easily.

Thousands (1000) kilo	Hundreds (100) hecta	Tens (10) deka	Ones (1) gram (g) litre (l) metre (m)	Tenths (0.1) deci	Hundredths (0.01) centi	Thousandths (0.001) milli
3	1	0	3	4	5	7

It can be read as

3.103457 thousands	3.103457 kilo g/l/m
31.03457 hundreds	31.03457 hecta g/l/m
310.3457 tens	310.3457 deka g/l/m
3103.457 ones	3103.457 g/l/m
31034.57 tenths	31034.57 deci g/l/m
310345.7 hundredths	310345.7 centi g/l/m
3103457 thousandths	3103457 milli g/l/m

ETV programmes entitled. "Spike-abacus (Acc. No. M 226)" and "Zero Ganit Ka Hero (Acc. No. M – 538)" may be shown to the participants.

Fractional Numbers

Main Ideas:

(i) Fraction as a part of a whole and also a part of a collection of objects

(ii) Equivalent fractions – different fractions representing the same fractional number

(iii) Four fundamental operations of fractional numbers

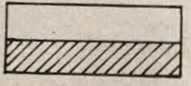
(iv) Solving problems of day-to-day life involving fractional numbers

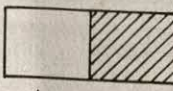
Strategies: The concept of fractional numbers is introduced as early as in Class I. The child does possess some familiarity with terms like 'half' and 'one-fourth' even before entering the school. He/she has heard several times the use of terms 'half' and 'one-fourth' in various life situations, such as:

1. Asking for half a banana.
2. Getting half a glass of milk.
3. Walking one-fourth of a distance.
4. Giving half more, etc.

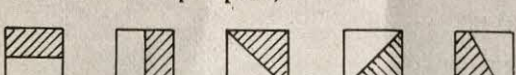
But with the introduction of the terms 'half', 'one-fourth', etc. these should also be introduced in mathematical terms. When a whole object is divided into two equal parts, each part is a half of the whole. When some objects are distributed equally between two persons, each gets half of the objects.

Take a rectangular sheet of paper. Fold it in two halves by bringing the two opposite edges of the sheet together. Since there are two pairs of opposite edges, the rectangular sheet can be folded in two halves in two different ways. Now take a square sheet of paper. Ask the children to fold it into two halves. This sheet can be folded into two halves in infinite number of ways. (Demonstrate it to the children.)





(Any line passing through the centre divides the square in two equal parts)



The concept of 'half' can well be illustrated by using the 'fraction disc', an item of the OB kit supplied. In this kit, there are two pieces of equal size which fill the entire circular cut-out region (which represents the whole or one unit). Each piece represents half of the whole.

Using other pieces (insets), understanding of 'one-third', 'one-fourth', '—' one-tenth can be given to the pupils.

Using the fraction disc, following activities can be performed and the outcomes of learning listed above can be ensured.

Activity 1: The concept of fractional number is introduced in Class II (Refer Unit 7 of *Let's Learn Mathematics* Book Two) explaining first the meaning of the term 'Fraction'. The present activity leads to comprehend this term in a better way.

Make available to the children all the pieces (insets) and the square board with its circular cut-out. Ask the children to select the pieces of equal size and make separate heaps of pieces with equal size. They will have 10 heaps, one containing only one piece, another containing two pieces and like this up to the heap containing ten pieces.

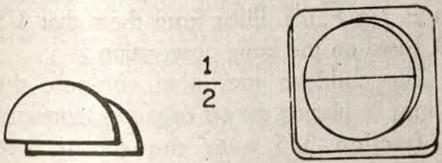
Now, ask one group of children to fit into the circular cut-out all the pieces belonging to a particular heap, another group to fit in another set of pieces belonging to another heap, and so on, one after the other. Make them observe that the pieces belonging to each heap fill the entire region of the circular cut-out. The pupils would come to realise that a number of pieces put together fill the entire circular region and that each piece is only a part of the entire cut-out region.

Ask a child to pick the circular disc from among the pieces and fit the same into the circular cut-out. The children find that the circular disc exactly fits into the circular cut-out. In other words, the circular disc occupies the whole circular region. Tell them that the circular disc represents the whole or one (unit).

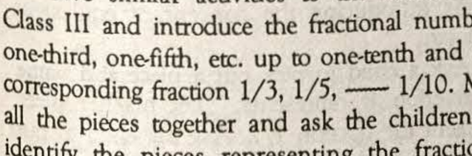
Ask another child to remove the circular disc and to look for two inset pieces of equal size which when fitted into the cut-out will cover the entire circular region. Let him/her try on a trial-and-error basis, select the pieces, put them into the cut-out region and see that these two pieces fit in smugly into the entire circular region.

Now explain to the children that when two pieces of equal size fill the entire circular cut-out region (which represents the whole or one unit), each piece represents one-half of the whole or one unit. Tell them that one-half of the whole is written as 1/2.

Let the children realise that when two pieces make a whole, one piece alone is one-half of the whole and when a whole thing is divided into two equal parts, each represents half of it. It is represented by the fraction 1/2, which means 1 part out of 2 parts which make a whole.



Now ask the child to pick the 4 equal pieces that entirely fit into the circular cut-out region in the square board and introduce that each piece represents one-fourth of the whole. It is represented by the fraction 1/4, meaning thereby 1 part out of 4 parts which make the whole.



Give similar activities to the children in Class III and introduce the fractional numbers one-third, one-fifth, etc. up to one-tenth and the corresponding fraction 1/3, 1/5, —— 1/10. Mix all the pieces together and ask the children to identify the pieces representing the fractions 1/3, 1/10, 1/6, etc. This will develop in children the space concept. Let them also learn that if 3 equal parts make a whole, each part is 1/3 or if a whole is divided into 3 equal parts, each part is 1/3. Similarly, ask them to tell for other fractions, i.e. 1/4, 1/5, 1/6, 1/7, 1/8, 1/9, and 1/10. For the purpose of convenience, the teacher can write on one piece of each heap, containing pieces of equal size, what fraction it represents, so that the children can easily identify the pieces representing a particular fraction.

Activity 2: When the concept of fractional numbers is continued in Class III, a question naturally arises in the minds of children whether 1/2 is bigger or 1/3, whether 1/2 is bigger or 1/4, and so on. The following activity will provide learning experiences to children for the comparison of fractions. Ask the children to pick up the 2 pieces that represent the fraction 1/2. Ask them to hold out 3 pieces that represent the fraction 1/3. Ask them to hold one piece representing 1/2 and the other piece representing 1/3 and tell by observation, which piece is bigger. They may even place one piece over the other and find out out which is bigger. Let the children observe, compare and find that 1/2 piece is bigger than 1/3 piece or 1/2 is greater than 1/3. Correspondingly, tell them that 1/3 is less than 1/2.

Ask children to use appropriate signs of > and <, and write 1/2 > 1/3 or 1/3 < 1/2. Continue the above activity while teaching the ordering of fractions in Class III and let the children find out which fraction is bigger and which is smaller by comparing all the fractions 1/2, 1/3, 1/4....................1/10 taught to them and draw the conclusion that

1/2 > 1/3 > 1/4 > 1/5 > .... > 1/10

or

1/10 < 1/9 < 1/8 < 1/7 < .... < 1/2

All the fractions are only part of the whole or one. So the pupils may be asked to use this fact and further write

1 > 1/2 > 1/3 > 1/4 > .... > 1/10

or

1/10 < 1/9 < 1/8 < .... < 1/2 < 1

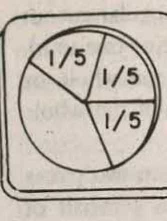
The pupils may also be asked to observe, what happens when whole is divided into more number of equal parts and find out that as the number of equal parts of a whole increases, the fraction represented by the corresponding one part becomes smaller. This will help them to find out which is smaller–1/7 or 1/2. As one is divided into 7 parts of the whole and the other is divided into 2 parts of the whole, the first, i.e. 1/7 is smaller.

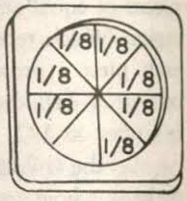
Now, ask a child to pick up 2 pieces, each representing the fraction 1/3 and put one piece by the side of the other and observe that they together make two one-thirds which is called two-thirds and is written as 2/3. If all the 3 pieces, each representing the fraction 1/3 are taken and put together, the children will find that it makes the whole. From this, they will understand that 3 pieces of one-third make three one-thirds or three-thirds, which is 3/3 or 1, i.e. the whole.

Repeat this activity with 3 pieces, each representing 1/5, 7 pieces each representing 1/8, and so on, to get 3/5, 7/8, etc. Let the children also learn that 3/5 is represented by 3 equal pieces, each representing 1/5, which can be written as 3 × 1/5. Similarly, 7/8 is represented by 7 equal pieces, each representing 1/8 and can be written as 7 × 1/8.

Having known about fractions like 3/5, 7/8, etc. the children will be eager to know which of the 2 fractions is greater/bigger. Here is an activity to visualise the comparison of such fractions.

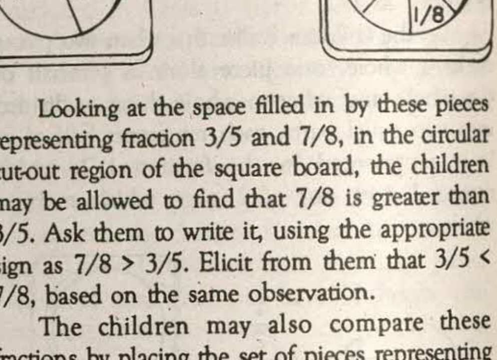
Ask a child to pick up inset pieces which when put together will represent 3/5. Ask another child to pick up inset pieces which taken together will represent 7/8. Now ask the first child to place the 3 pieces of one-fifth size in the circular cut-out of the square board and observe the shape occupied by the fraction pieces of 3/5 (See Fig.). Ask the second child to place the 7 pieces of one-eighth size and observe the shape occupied by the fraction pieces of 7/8 (See Fig.).





Looking at the space filled in by these pieces representing fraction 3/5 and 7/8, in the circular cut-out region of the square board, the children may be allowed to find that 7/8 is greater than 3/5. Ask them to write it, using the appropriate sign as 7/8 > 3/5. Elicit from them that 3/5 < 7/8, based on the same observation.

The children may also compare these fractions by placing the set of pieces representing the fraction 3/5 over the set of pieces representing the fraction 7/8 and find which is greater and which is smaller. (The circular cut-out of the square board need not even be used.)



3/5 7/8

7/8 > 3/5 or 3/5 < 7/8

Activity 3: This activity can be provided in Class IV for introducing the concept of equivalent fractions.

Ask a child to pick out a piece and name the fraction it represents. Let his/her piece represent the fraction 1/2. Ask the child to put this piece in the circular cut-out region of the square board. Ask another child to select 2 pieces of equal sizes which the child thinks when put together will make the fraction 1/2. Ask him/her to place these pieces over the piece representing the fraction 1/2 and now kept in the circular cut-out region of the square board. If both the sets coincide or the pieces cover entirely the piece representing the fraction 1/2 placed earlier, then it means that these two fractions are equivalent. If they coincide, ask the child to recognise what fraction does each piece represent. Allow them to find that 2 pieces of one-fourth are equivalent to one-half piece. Two pieces of one-fourth are 2/4. (The child may select the pieces on a trial-and-error basis. Allow it because that itself is learning.) Continue this activity and make the children find which of the pieces of equal sizes when put together will make for the fraction 1/2. Let some children try with the pieces representing 1/6, some with pieces representing 1/8, some with pieces representing 1/10 and with other equal sized pieces also and find out that only certain number of particular pieces of equal size representing a fraction when put together will make for the fraction 1/2. (Note that only equal sized pieces are being put together to make a fraction.)

By repeated activities the children will be able to find that

1/2 = 2/4 = 3/6 = 4/8 = 5/10

Extending this activity in respect of all pieces of equal size, the children can also learn that a whole or one is equal to

1 = 2/2 = 3/3 = 4/4 = 5/5 = 6/6 = 7/7
= 8/8 = 9/9 = 10/10

Activity 4: Addition of fractions is another concept in which the fraction disc can be very profitably used to provide better visualisation of facts.

Case 1: In Class III, when we introduce the addition of two fractions, like 1/5 and 2/5.

Ask a child to pick out a piece that represents the fraction 1/5 and place it in the circular cut-out region of the square board. Ask another child to pick out 2 pieces of one-fifth to represent 2/5 and put these pieces by the side of the piece one-fifth, already placed in the circular cut-out.

Together, now these 3 pieces make 3 pieces of one-fifth size, which together represent 3/5. The children can conclude that

1/5 + 2/5 = 3/5

Ask the children to repeat this activity for adding the fractions 1/8 and 2/8, 1/7 and 4/7, 3/8 and 4/8, 6/10 and 4/10, etc. and reinforce the concept of addition of like proper fractions. Related activities involving the addition of more than two like proper fractions can also be given.

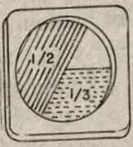
Case 2: Extend this kind of activity for introducing the addition of 2 or more unlike fractions in Class IV, like 1/2 + 1/3.

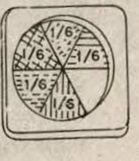
Ask one child to pick out the piece representing the fraction 1/2 and another piece representing the fraction 1/3. Ask him/her to find out pieces of equal size which will cover completely the space of the pieces 1/2 and 1/3 separately. The child will try through trial-and-error method. He/she may choose 3 pieces of 1/6, 4 pieces of 1/8, 5 pieces of 1/10, etc. to coincide with the fractional piece 1/2, and may choose 2 pieces of 1/6, 3 pieces of 1/9 for the fractional piece 1/3.

Now tell the children to find the pieces of equal size common ~~to~~ both for covering the space of the pieces representing 1/2 and 1/3. They will find that it will be one-sixth piece. 1/2 will hold 3 pieces of one-sixth, i.e. 1/2 = 3/6; and 1/3 will hold 2 pieces of one-sixth, i.e. 1/3 = 2/6.

The children will realise that adding 1/2 and 1/3 is nothing but adding 3/6 and 2/6. As is done in case of addition of like fractions, 3/6 and 2/6 are added to get 5/6. The children will find that

1/2 + 1/3 = 3/6 + 2/6 = 5/6





Extend this kind of activity for addition of more than two unlike fractions.

Note: The kit has inset pieces representing fractions 1/2, 1/3,———, 1/10 only. The teacher can prepare different sets of insets to represent fractions like 1/12 and 1/15, etc. and also use them.

As the fraction disc is used in activities to teach the addition of like and unlike fractions, they can also be used for subtraction of fractions.

ETV Programmes entitled, 'Fraction Disc (Acc. No. M – 223)' and 'Decimal Fractions (Acc. No. L – 488)' may be shown to the participants.

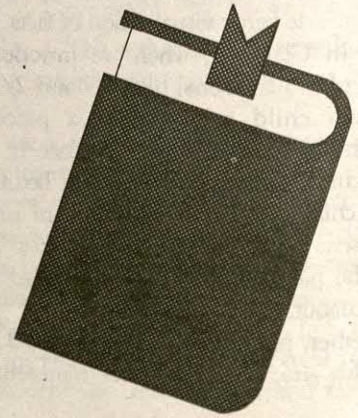
Assignments/Exercises

Based on the strategies suggested above in respect of the concept of place-value and fractional number, the participants may like to develop strategies on some other concepts, operations, etc. that are dealt in the primary stage curriculum.

In particular, the participants may develop strategies on the following.

1. *Division of Whole Numbers*
   - Divisions as a measurement concept and also as a partitive concept.
   - Division as a shortened process of successive subtraction and also as the inverse process of multiplication.
   - Algorithm of division.

2. *Percentage*
   - Meaning of 'per cent'
   - Percentage, a special kind of fraction.
   - Fraction, decimals and per cent are different ways of expresseing a number, i.e. 1/2, 0.5 and 50%, all represent the same fractional number one-half.
   - Per cent as ratio.
   - Percentage in problems of day-to-day life.



Teaching of Environmental Studies I (Social Studies)

Daljit Gupta, V. P. Garg

Overview

Environmental Studies is one of the major subject areas at the primary stage. It aims at developing in the child an awareness and understanding of his/her natural and social environment. In Classes I and II the natural and social environment are covered in an integrated form and for Classes III - V the area is bifurcated into social studies and science though the approach to teaching remains the same.

All of us have observed that from a very early stage the child starts interacting with his/her immediate environment. The language learning and performance of small activities are the result of child's observation and interaction through different sense organs with what happens in the most important and the smallest social unit 'family'. Environmental studies provides systematic opportunities to the child to study and understand his/her natural and social environment in its totality. The scope of the study widens gradually starting from the immediate surroundings of the child to the whole country and the world to some extent.

Environment

What is 'environment' for an individual? It comprises all the natural and social components, interaction with which affects the growth of an individual (physical, emotional, social and economic) to varied degrees.

Natural environment has two major components–living and non-living. Social environment consists of various institutions such as family, school, community, public and private institutions, religious institutions and institutions related to the government (local, state or central).

While the components of natural environment are basic for the existence of life in various forms, the social institutions provide opportunities for emotional, intellectual and vocational growth of man. The social environment also helps in development of acceptable values, habits and attitudes for effective and fruitful living and functioning in society.

Objectives

A study of this module will enable the reader to

- understand the concepts of environment, environmental studies and environmental approach of teaching;
- appreciate the need to adopt environmental approach as a teaching-learning strategy;
- design activities aiming at self-learning by children;
- plan and adopt techniques for continuous evaluation of children.

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* We acknowledge the contribution of Prof. S.N. Tripathi in the functional part of the module who acted as a resource person in the workshop held for this purpose from 14 to 19 June 1993 at the NCERT, New Delhi.

The continuous process of interaction between men and his/her environment leads to a series of changes in both natural and social environment.

Environmental Approach

Environmental approach to teaching refers to the strategies of teaching-learning process that provides opportunities to the children to observe and interact with the environment and thus acquire the various competencies. The significant feature of the approach is the child's familiarity with the environment and its exploitation for developing identified competencies, skills and ideas aiming at effective and sound learning. This approach cuts across all barriers of subjects or disciplines and leads to integrated learning which suits the growth level of children at this stage.

Salient Features of Environmental Studies I

The study of the social environment

- involves a systematic and organised exploration of the functioning of the social institutions;
- involves participation in various social activities/functions and acquiring not only the knowledge but also developing desirable habits, values and attitudes;
- provides opportunities for self-learning with equal emphasis on 'what' to learn as well as 'how' to learn, thus facilitating adoption of 'child-centred and activity-based', 'learning by doing', and 'problem-solving' approaches of teaching by the teacher;
- emphasises learning through immediate environment and direct experiences but it does not restrict the child's awareness to his/her local world. It aims at a careful extension of the child's mental horizon from known to unknown, from immediate to remote and from concrete to abstract.

Minimum Levels of Learning in EVS I at Primary Stage

The minimum levels of learning identified (in terms of terminal competenices/skills) in EVS-I and expected to be attained by each child at primary stage are indicated below.

The learner should

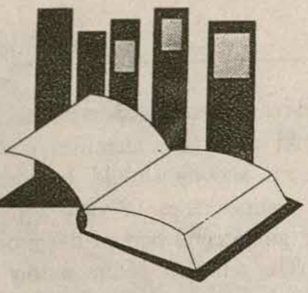
- know the basic facts and information about the immediate social environment such as different institutions, means of transport and communication, etc.;
- understand the relationship between life of people and physical features, natural phenomena such as climate and natural resources, etc.;
- appreciate the role of people engaged in different occupations in making the life of community comfortable and rich;
- understand the process/origin of happenings/events taking place in the world around us;
- develop norms and modes of behaviour that are consistent with values enshrined in the constitution of the country such as democratic way of life, national identity, respect for others' religion and ways of life and participation in national development programmes;
- understand and appreciate the relationship between man's past and present, and hold the past in its proper perspective;
- understand India's rich cultural heritage and appreciate the similarities and diversities of the culture; and contributions made by people belonging to different parts, races and speaking different languages;
- develop skills of observation, gathering and classifying the information and drawing simple inferences.

Teaching-learning Strategies

The approach to teaching-learning in EVS should be child-centred and activity-based. To enable each child attain the identified competencies/skills, each activity should be planned with specific competencies in view and evaluation must be an integral part of the process of the activity. The selection of the activity should be according to the mental maturity of children. The activities planned should neither be very simple nor very difficult. Very simple activities do not provide sufficient challenge for learning. Similarly, very difficult tasks discourage the children and affect further learning. Some suggested strategies/activities are :

- Providing the children opportunities to observe local environmental features, problems and changes that occur in the community life; collect and classify information, and drawing conclusions
- Organising visits to various institutions
- Providing opportunities for participation in celebration of festivals, fairs (on specific themes); role play; dramatisation of significant happenings/events
- Providing guidance in finding solutions to identified problems through collection of information from various sources, discussions, etc.
- Providing guidance in the use of source material; developing material such as scrap books; making models, etc.
- Diagnosing/identifying the difficulties being faced by individuals/groups and designing remedial activities
- Using variety of aids, media facilities for motivating children in finding solutions to problems; further learning; planning remedial activities, etc. and developing simple aids, if possible, relevant to specific problems

As far as possible the concrete material available in the immediate environment should be used. The following materials may also be used as and when the situation arises.



Material provided under OB scheme

- Four maps (district, state, India and world)
- Globe
- Charts
- Video film produced by CIET on 'Use of Map'
- Newspaper cuttings, cuttings from magazines could also be used in various situations and in various forms.

Activities to be Performed by Teachers

The teachers should identify competencies which may need adoption of different strategies of teaching-learning and plan activities including the various steps of the activity, material (aids) required, evaluation techniques to be used for assessing the attainment of competencies by all children. If possible, the activities may be demonstrated with school children or in simulated situations.

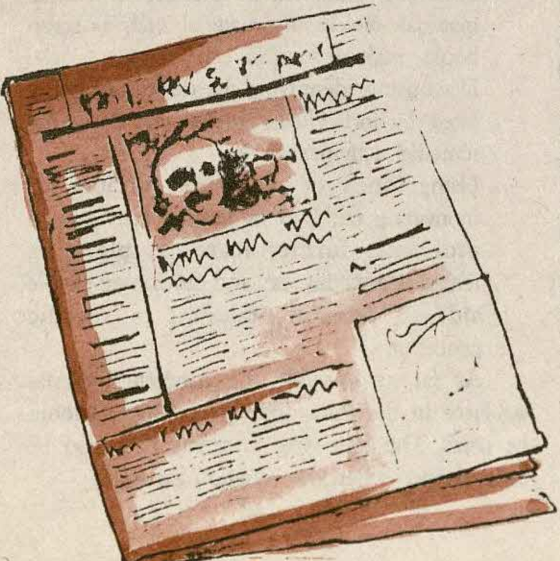
The following exemplar activities have been suggested to deal with some aspects of one of the major areas in Environmental Studies I at the primary stage. The competencies under the area are spread over all the five classes of this stage.

Exemplar Activities

The area identified for developing exemplar activities states: 'The pupil understands and interprets the spatial and interactive relationship between man and his environment'.

The area is very broad and includes a large number of competencies. Since maps and the globe are very useful in visualising spatial relationship, the activities are confined to the teaching strategies of concepts and sub-concepts related to the use of maps, globe and immediate environment of the children.

The main competencies related to the spatial



relationship as listed under the minimum levels of learning (MLLs) are given below :

Class I

The learner will be able to
- identify important land features like river, pond, hill, etc. with their distinct characteristics;
- estimate distances through important landmarks of the area like market, bus stand, post office.

Class II

The learner will be able to
- gain knowledge of direction through the help of sunrise and sunset;
- relate the nature of weather with different seasons and seasons with activities performed by living beings.

Class III

The learner will be able to
- draw maps of known and observed places;
- locate his/her district in the map of the state and the state in the map of India;
- locate main geographical features, like crops, production yield, industry and climatic conditions of his district (through field experiences);
- describe the living style of people having different occupations.

Class IV

The learner will be able to
- give the names of all States and Union Territories of India and to identify the names of neighbouring states adjoining his/her state;
- describe main geographical features and climate of his/her state and compare them to those in other states of India;
- identify different physical features on the physical map of the country;
- understand distribution of important natural resources in his/her state and give their importance for the country;
- give distribution of main crops and know main occupations of the people and location of industries in the state;
- locate important places and routes, and explain their importance for the state;
- to use the Atlas and different types of maps given in the Atlas.

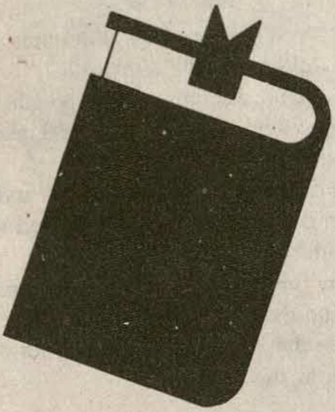
Class V

The learner will be able to
- identify land and water-masses, poles and equators on the globe;
- locate India on political map of Asia and describe its position in relation to Indian Ocean and neighbouring countries;
- identify and describe main natural resources of India and understand the importance of judicious use of these resources and consequences that are likely to follow through their indiscriminate use;
- locate the areas/places where major crops are grown and major industrial units are established in India;
- locate important places and identify different kinds of routes in India.

Demonstration Activity for Classes I and II

Competencies

The learner will be able to
- recognise the various symbols indicating a hill, pond, river, railway line, road crossing, bridge, etc.;
- estimate the distance between his/her home and school; home/school and market/bus stand/railway station/post office/ any other significant place in the area; and
- find out the direction of the location of different significant places in the village/city.



Activity

1. Identify and draw on the blackboard different symbols with the help of children. (The teacher can also use a chart showing different symbols.) If possible, the teacher can show some of these places by taking the children for an outing under his/her guidance (Video film developed by the CIET on 'Use of Map' mav be shown.)

2. Form small groups of children (consisting of 5-6 children)

3. Ask each group to select a particular place in the locality/village/city and draw a sketch map to reach that place indicating all the important places in symbols.

4. Ask them to estimate the distance between the school and each place identified by each group. (The estimation can be done through actual demonstration through the steps taken by a child for a small distance and measuring it.)

5. Ask each group to find out the direction of the place selected by them. (It is assumed that the children have already been given the concept of directions.

Evaluation

The children may be asked to draw similar sketch maps indicating places between their homes and different important places or between two significant places.

Demonstration Activity for Classes III and IV

Competencies

The learner will be able to

- recognise and identify different symbols on a map;
- understand and interpret the scale on the map;
- locate his/her district/state/country on various maps; and
- locate the boundaries of different States/UTs in India, and those of the neighbouring countries.

Activity

1. The children in small groups may be asked to identify different physical features, States/UTs, agricultural crops, industrial units/ any other on different maps (wall/given in the textbooks).

2. The concept of scale may be given through actual demonstration (Video film developed by the CIET on 'Use of Map' may be used here for demonstration.)

3. Ask children in small groups to measure distance between five important places using the scale (could be done in the later part of Class IV.)

Evaluation

The children may be given different assignments such as finding with the help of map(s) the names of neighbouring countries, names of States having different agricultural products, names of States having specific industries, names of States/ UTs and their capitals, etc. The teacher may decide the level of assignments as per the level and class of children.

Demonstration Activity for Class V

Competencies

The learners will be able to

- identify the parallels of latitudes and meridians of longitudes.
- locate the places with the help of latitudes and longitudes.

Activity

Display the globe and put the following questions to the participants to recapitulate their previous knowledge:

1. What is this called ?
2. What is represented by this model?
3. What shape of the earth is represented by this model?

1. Demonstrate the globe prominently before the participants. Ask them to observe the circles and semi-circles drawn on the globe. Inform them that these are imaginary lines drawn on a globe. There are many uses of these lines. One of the most important use is that they help us in locating the places accurately.

2. Ask a group of four or five participants to come near the globe. Instruct them to observe the globe and find out the following :

(a) Which circular line divides the globe into two equal parts? What is this line called?

(b) What are the northern and southern parts of the equator called?

(c) What are the circular lines drawn parallel to the equator called?

(d) What happens to the size of these circular lines when we move to the south and to the north of the equator?

(e) What shape do these lines take at the northern and southern tips of the globe? What are these called?

(f) How have the circular lines been numbered?

(g) What are the values in degree of the following:

(i) Tropics of Cancer and Capricorn

(ii) Antarctic and Arctic Circles.

3. Give the facts/information when participants do not give the correct answers.

4. Ask each member of the group to note down the facts in his/her notebook. Instruct one of the members of the group to demonstrate and explain the findings to all the participants. He/she will also take the globe to small groups of participants and make them observe the circular lines. Each participant will note down the findings in his/her notebook.

Instruct another group of four or five participants to come near the globe. Ask them to observe the globe and find out the following.

(a) What are the semi-circular lines joining the poles called?

(b) Which line passes through Greenwich? What is its name?

(c) How many lines of longitudes have been drawn on the globe?

(d) How have these lines been numbered?

(e) What do the lines of latitudes and longitudes form on the globe?

(f) Between which lines of longitudes and latitudes is India located?

(g) Between which lines of latitudes and longitudes is Africa located?

(h) Find out the nearest lines of latitudes and longitudes of Delhi, Pondicherry, Jaipur.

5. Give the facts/information when participants do not give the correct answers.

6. Ask each member of the group to note down the findings in his/her notebook. Instruct one of the members of the group to demonstrate and explain the findings to all the participants. He/she will also show the globe to small groups of participants and make them observe it. Each learner will note down the findings in his/her notebook.

7. Instruct each participant to draw a circle representing the earth. Ask them to draw the following in the circle:

1. Equator
2. Tropics of Cancer and Capricorn
3. Arctic and Antarctic Circles
4. North and South Poles
5. Prime Meridian

Evaluation

Study the globe and answer the following questions briefly:

(a) Which important latitude runs through India and through which part ?

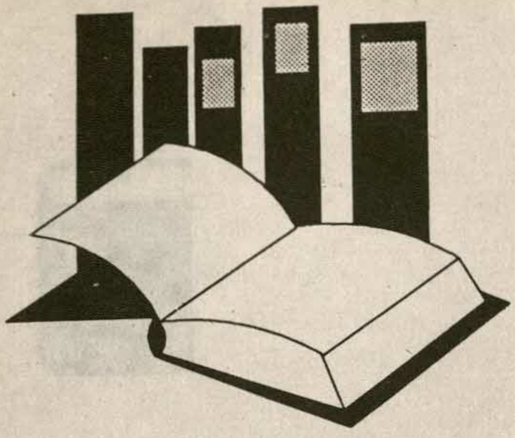
(b) In which hemisphere is India located?

(c) Name the continents through which the Equator passes.

(d) Write the name of the continents which are situated in the northern and the southern hemisphere ?

(e) What is the main use of the lines of latitudes and longitudes?

(f) Find the nearest latitudes and longitudes of the following places: (i) London, (ii) Delhi, (iii) New York, (iv) Tokyo, (v) Moscow.



Teaching of Environmental Studies II (Science)

SHUKLA BHATTACHARYA, B. K. SHARMA

Overview

For more than two decades Environmental Studies has made a place of its own in the primary school curriculum. It has emerged as an important area of learning and accounts for 15 per cent of the total time allotted for different subjects at the primary stage. The world-wide concern for environmental degradation has further made it imperative for the young children—the future citizens to develop in them serious concern and values, and appreciation for protection and preservation of the environment. Thus, the subject areas as General Science, Social Studies of early and late sixties have been replaced by this new curricular area known as Environmental Studies. But what is environmental studies? Why has it been included in the primary stage? In what way does the transaction of environmental studies differ from the teaching of history, geography and science?

You have perhaps seen and read many write-ups, attended workshops and seminars, and discussion groups on certain important themes related to the environment. Terms such as, 'enviornment', 'environmental approach', 'environmental education', 'environmental science' are quite familiar to you. Do these terms mean the same thing or different things? Why so much concern about these terms? In this module we shall try to explain some of these and may also suggest some specific teaching-learning strategies to transact curriculum in environmental studies.

**Vetting group* : S. C. JAIN, S. B. SINGH, S. K. PARADKAR, P. R. RAO, B. K. SHARMA, SHUKLA BHATTACHARYA

Objectives

After studying this module you will be able to

- define environment and its parameters;
- define enironmental studies and specific components of this area of learning;
- discriminate between environmental approach and discipline-based approach;
- list the various reasons why environmental studies has been recommended for primary level in place of science and social studies;
- develop skills in analysing the potentialities of environment;
- devise local specific activities to develop study skills and basic skills in children;
- develop skills in planning and organisation of indoor and outdoor activities;
- prepare a variety of tools and techniques of continuous and comprehensive evaluation in environmental studies.

Induction Questions

1. What is environmental studies?
2. Why is it essential to include environmental studies at primary level?
3. What are Minimum Levels of Learning in environmental studies?
4. What are specific teaching-learning strategies peculiar to environmental studies?
5. How to organise teaching-learning activities in the classroom?
6. What are the prerequisites of organising such activities?
7. What are the tools and techniques of evaluating pupil's achievement? And how to keep record of pupil's progress?

Environmental Studies : What, Why and How?

Environmental studies comprises two words 'environment' and 'studies'. It mainly leads to the study of the environment. How do we define environment? Environment is totality of the natural and social factors, events, phenomena, occurrences that directly or indirectly affect an individual. Interaction with these factors influences his/her life style. Thus, it is a sum total of all the factors with which an individual interacts. Human activity, in turn, affects changes in his/her environment. This constant interaction is a two-way process and their action produces a series of changes and in turn brings about qualitative changes in the total environment. Thus, it can be said that the environment is always in a state of flux or change.

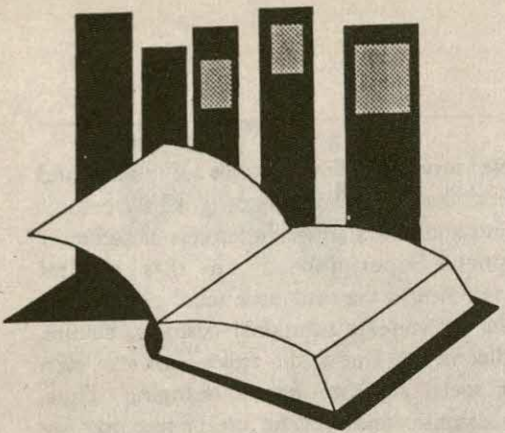
Environment in its holistic nature is composed of natural, social and human

resources, and a child interacts with the environment in its totality. The environmental studies is multidisciplinary in nature and comprises the content methodology of science and social studies. It helps the child to place himself/herself and understand his/her role in the natural and social environment in which he/she lives through the development of basic social and scientific skills. Environmental studies provides opportunity to the learner to understand the interdependence of man and his environment along with the basic scientific facts, concepts and principles of man's bio-physical and social environment. It helps the child to appreciate the need for a healthy living and helps to improve the quality of life.

Natural environment comprises physical or abiotic components and living or biotic components. The abiotic or non-living components of the environment are land, water and air. The biotic components are plants and animals, i.e. all living things including human beings. From huge elephants and trees to the tiny bacteria are all parts of this living component. This is also called the biosphere. Both biotic and abiotic components are our natural resources. These components of the natural environment are our natural resources. These components of the natural environment are essential for sustenance of life on earth. In very early days when man had not yet learnt to live in settlements and was mainly hunter and food-gatherer, there was always a balance in nature. But as human beings took control of nature, natural calamities, population of human beings increased and got multiplied. Advances in science and technology helped man to conquer and control nature. Over-population led to over-exploitation of natural resources. Thus, slowly but surely it disturbed the balance of nature. Today at the threshold of twenty-first century, the mankind is facing menacing threat of being wiped out, therefore, it is a question of mere survival. Many species of plants and animals have already disappeared or have become extinct and others are in the process of becoming extinct. Superimposed on this natural environment is the man-made social environment – its structure, institutions, customs, culture, traditions, etc. Due to the activities of man even our social environment is changing. Thus, consumerism and wasteful use of resources are further putting stress of this delicate situation. This environmental degradation has placed renewed emphasis on environmental protection and preservation. Hence, there is an urgent need for environmental education.

Environmental Studies at the Primary Level

Environmental studies has been included at the primary stage to develop an awareness and understanding of physical and social environment of the child through organised investigation and systematic exploration of his/her immediate and remote environment. As a result of this exploration, he/she learns about the objects, events, phenomena and other happenings in his/her environment. As he/she *learns about the environment*, he/she also uses environment as a vehicle of learning. Thus, he/she develops skills and competencies of basic mental processes of observation, recording, classification, collection, ordering of data, communication, prediction and inferences, and ability to make proper decisions. In fact a child learns to behave like a scientist. The environment becomes the vehicle of learning. This is the *learning through the environment*. Thus, the learning based on inquiry approach becomes *child-centred, activity – oriented* and *competency-based*. The activity-based and learner-centred approach makes learning very effective as it involves problem-solving, and 'learning by doing'. Activities are thus not artificial but real problems of daily life experiences. The interaction of these two processes develops in a child a value system,



care, concern and feeling for preservation and protection of the environment. Thus, environmental studies is also *learning for the environment.*

As envisaged in the *National Curriculum for Elementary and Secondary Education : A Framework* (NCERT, 1988), environmental studies has been visualised as an integrated course in Classes I and II. In Classes III-V, it is treated as two separate courses, Environmental Studies I (Social Studies) and Environmental Studies II (Science). The framework further states that through teaching of Environmental Studies II (Science), the child should be helped to discover and understand the scientific facts, concepts, principles and processes underlying various phenomena around him/her. A child should also systematically observe and explore things in the environment, formulate precise questions related to them, record and classify observations/data systematically, collect information based on concrete experiences and analyse it to draw conclusions including those related to the cause-and-effect relationship. This inquiry approach discourages rote memorisation but helps in making teaching-learning of environmental studies more interesting, effective and meaningful for the children in order to improve the quality of their life. Various types of skills and abilities expected to be developed in the children are curiosity, courage to ask question, spirit of inquiry, creativity, objectivity, open-mindedness and abilities for problem-solving and rational decision-making skills.

Thus, the rationale for including Environmental Studies II (Science) at the parimary level are as under.

1. A child views his/her world in a holistic manner and not as separate components of subject discipline. Interacting with his/her day-to-day experience is the most natural way in which a child learns and acquires skill of gathering information, processing information

and using the same to solve problems and thus improving the quality of his/her life.

2. A child learns better when he/she is actively involved in activities which interest him/her. Acitivities which engage a child's attention and active participation can be extremely rewarding and the learning so acquired is permanent.

3. The community/local surroundings where child is born is his/her basic root. He/she is most familiar with his/her own environment. He/she must develop a sense of belonging, learn its specific features, culture, traditions which need to be preserved, cherished and transmitted to future generation.

4. A child develops ability to adjust to change in his/her environment for better or for worse, including the impact of various technologies such as industrialisation, mass-media, etc.

5. A child develops ability to cope with changes in his/her environment and also develops skills and competencies to face challenges he/she is likely to meet in future.

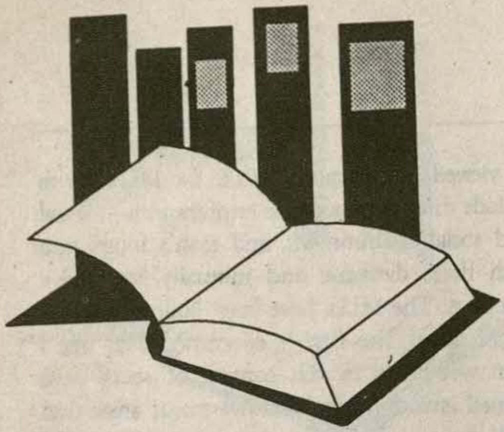
Minimum Levels of Learning in Environmental Studies II

The National Policy on Education, 1986 (NPE-86, revised 1992) has enunciated that minimum levels of learning be identified for each stage of education. This calls for defining specifically what children should learn by the end of every stage of education. The specific concerns, issues and problems in respect of laying down the minimum levels of learning have been/will be discussed in other modules. Here, only the specific MLLs related to environmental studies will be discussed. These have been identified in the Report of the Committee set up by the Ministry of Human Resource Development (Department of Education) on 'Minimum Levels of Learning at Primary Stage' (NCERT, 1991). As mentioned earlier the environment needs to be viewed in totality, therefore, the MLLs try to include three aspects of the environment—natural and social environment, and man's interaction with these dynamic and mutually interactive elements. The MLLs have been built around 10 major areas. The first is concerned with one's own well-being in the context of social and natural environment. Next five major areas deal with the socio-civic environment, i.e. the world of work, spatial relationship between man and his natural and social environment, man's past and present relationship and some common problems concerning environmental interaction. The last four major areas relate to selected components of natural environment. For the purpose of Environmental Studies II (Science) the following main areas concerning MLLs are listed below:

The pupil

- The acquires awareness about one's well-being in the context of social and natural environment;
- understands the factors contributing to the preservation of good health;
- develops skill in gathering and classifying information about living things from one's own environment and drawing simple inferences;
- observes and examines some common characteristics of non-living things;
- observes simple phenomena on the earth and sky, and draws conclusions.

These major areas have been sub-divided into sub-areas, each sub-area contains competencies and sub-competencies. These sub-areas and competencies and sub-competencies are so designed as to enable a teacher to organise activities and tools for evaluation to assess the achievement of the pupils. The identified competencies are to be achieved by all pupils at the end of the primary stage. Competencies are stated in a sequential manner and should



be developed in a phased manner, ascertaining that all children must attain previous competency before further learning of next higher competency. Being a teacher you must ensure that each and every child develops the requisite competence through continuous and comprehensive evaluation. The purpose of continuous and comprehensive evaluation is to ensure that the progress and development of competencies in each child is monitored so that the competencies are attained completely. Thus, attainment of MLLs is based on the master-learning of each competency by each and every child.

Learning Resource (Instructional) Materials

For the effective teaching-learning of environmental education, the optimal use of appropriate teaching-learning resource materials, preferably of low cost and prepared out of locally available environmental resources is necessary, in addition to the use of instructional materials such as textbooks, teacher's handbooks, charts, models and also pictures taken from newspapers, science magazines, news items, including the use of mass media such as the radio, TV, etc. Though the environment itself is a learning resource for the child to explore, some basic equipment have been provided in the Primary Science Kit (PSK) package. The PSK package consisting of teacher's handbooks, a set of 70 chart cards, Primary Science Kit and the Kit Manual developed by NCERT is one of the components of the essential facilities being provided to primary schools under the 'Operation Blackboard' (OB) scheme. However, it is not always essential to organise teaching-learning activities in Environmental Studies (Science) with the basic items, materials and equipment provided in the PSK package. Locally available materials from the environment should also be made use of as far as possible.

The Primary Science Kit package has been designed to make learning of Environmental Studies II (Science) activity-based. The PSK package contains a variety of items, some of which are of everyday use and are readily available but there are many items which have been specially designed. There are 91 items (considering the set of 70 charts as one item) and can be broadly categorised under various sections as :

- Measurement, demonstration, experiment (49 items)
- Rocks and minerals chips in plastic containers with screwed caps (6 items)
- Chemicals in plastic containers with screwed caps (10 items)
- Miscellaneous (12 items)
- Hand tools (9 items)
- Chart cards (70 items)
- Teacher's Handbooks on Environmental Studies for Classes III, IV and V (three volumes) and a kit manual.

Some items are specially designed for multipurpose use and require special skills in handling and assembling. These are beam balance, globe-cum-hemispherical reflector, multipurpose pump, electric circuit board, water wheel, wedge/inclined plane, etc. The kit manual helps the teacher to identify the required item for doing an activity and also gives details of how to assemble and use the items/materials for a special assembly/set-up which can be used in a variety of activities for teaching-learning of various concepts in Environmental Studies II (Science). The kit manual provides a list of activities class-wise, which can be performed, and also includes a complete list of the kit items in order to facilitate the replacement of broken items and consumables. The PSK package is intended to give the teacher confidence and enables him/her to motivate students to explore the environement through observation and 'learning by doing'.

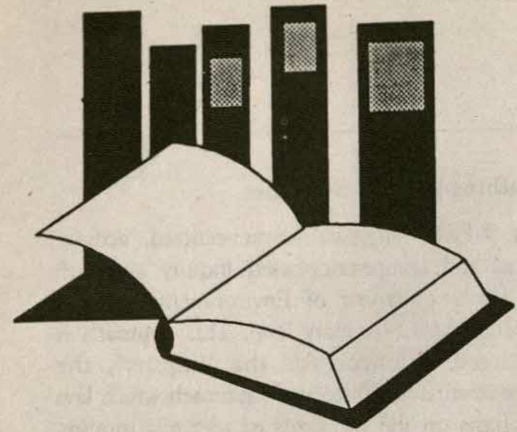
Teaching-learning Strategies

The NPE-86 suggests learner-centred, activity based and competency-based inquiry approach for teaching-learning of Environmental Studies (Science) at the primary level. This approach is expected to encourage the 'inquiry', the 'experimental' or 'discovery' approach which lays emphasis on the processes of scientific inquiry, investigative and inductive learning, problem-solving and logical, creative thinking, based on locally available natural and human resources. You as a teacher should act more as an activity-facilitator, organiser, guide, supervisor, moderator, co-investigator and co-learner and not merely as a communicator and disseminator of knowledge related to the enviromental problems/issues and real life situations.

The teacher is expected to encourage active pupil participation through environment-based and activity-oriented approach. You should know the structure and potential of the environment surrounding the school or home, e.g. animals, plants, trees, river, land, social institutions, etc. You should also study the local environment before taking pupils for a field trip and carry out activities using environment as a resource.

The classroom territory has to be expanded over the whole environment. For this purpose, you must have certain abilities and productive skills, so necessary for conducting out-of-class activities, such as field trips. You may undertake field studies based upon the direct experience with the local situations and immediate natural environment of the learner. It may be pointed out that one field trip may lead not only to one but to a number of group activities. The field trip should be followed by a group activity, group discussion, pupil–pupil interaction and pupil–teacher interaction in the classroom.

Being a teacher you should be able to plan suitable activities, prepare the students for activities, select appropriate resources, organise



and supervise group activities with pupils in the classroom, conduct discussion on activity and design appropriate teaching-learning strategies for transacting the Environmental Studies (Science) curriculum based on the real life situtations and day-to-day experiences of the learner. You should be able to improvise, handle and demonstrate low-cost, teaching-learning materials and use Mini Tool Kit and the PSK package as outlined in the 'OB' scheme. You should also have skills in material organisation and classroom management. (Refer Video Programme on Primary Science Kit and Mini Tool Kit.)

Since the objectives of teaching-learning in Environmental Studies (Science) at the primary stage are to develop learning process, skills and understanding of the basic conceptual framework, the learners are encouraged to observe systematically, explore their environment, record observation, collect and analyse data based on concrete experiences and draw simple inferences. The learners are given ample opportunities both individually and in groups as also within the classroom and outside to observe, explore, analyse, interpret and appreciate their natural and social environment. The transaction of environmental studies curriculum in the classroom is expected to develop scientific temper or scientific way of thinking, concern for maintenance and improvement of the environment.

You as a teacher should give ample opportunites to the pupils so that they are able to.

- observe carefully local environmental features, problems, simple and natural phenomena with keenness, such as living things like plants and animals, phases of the moon, weather phenomena, consequences of the occurrence of seasons, differences in the duration of day-light over the year, etc.
- classify living and non-living things, natural

and man-made things on the basis of given criteria or those chosen by the pupils; common plants on the basis of size, life span or seasonality; soils of the locality according to the size of its particle and fertility; given materials on the basis of some easily observable properties like colour, texture and hardness; draw inferences from such observations and classification, etc.

- understand the scientific concepts and principles related to everyday experience; main factors that contribute to good health and preservation of the environment; similarities and differences between animals and plants; important functions of human body, such as digestion, respiration, blood circulation; usefulness of vaccination to prevent communicable diseases, etc.
- participate in out-of-class activities to base the learning on immediate environment; child-to-child progra-mme to save life of ailing infants; tree plantation programmes of the locality and appreciate their importance etc.
- realise the need of protecting soils from erosion; the need of scientific ways of using environment and natural resources including conservation such as soils, minerals, water and forests, etc.
- develop good health habits and work habits such as taking care of such parts of the body as eyes, hair and teeth; practise personal cleanliness, etc.; draw various phases of the moon, weather phenomena, parts of the plant, etc.
- develop skills of observing, collecting, classifying and interpreting information about living and non-living things in the environment.

Let us now illustrate these points with a few examples—how activity-based and learner-centred teaching-learning strategies may be used to learn the environmental studies.

Competency based Continuous and Comprehensive Evaluation in Environmental Studies

Evaluation forms an integral part of teaching-learning process. The evaluation of learner's achievement at primary stage should be integrated with teaching-learning activities and done on a regular basis to judge if the competency has been mastered by the learner. Therefore, continuous evaluation which is diagnostic in nature is suggested at the primary stage. It should aim at helping the learner acquiring the minimum levels of learning in Environmental Studies II (Science). Further there is a need for comprehensive evaluation to evaluate achievement of competencies in both cognitive and non-cognitive areas of learning. The cognitive areas include:

- Knowledge (identifies the main parts of the body/plant; name the national bird, animal and flower; describes different uses of water, etc.)
- Understanding (sees relationship between unclean food and water, and diseases; classifies common plants on the basis of size, life span and seasonality)
- Application (generalises about the inter-changeability of three states of matter in respect of water; relates occurrence of day and night to the rotation of the earth, etc.)
- Skills (observes phases of the moon, observes various weather phenomena and records them with pictographs, etc.)

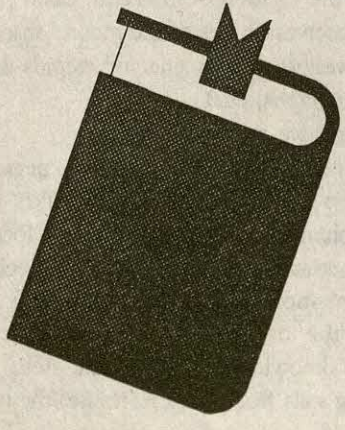
The non-cognitive areas include:

- Values, habits, attitudes (practises personal cleanliness including toilet habits; takes part in tree plantation programme of the locality and appreciates their importance; appreciates the importance of science in our daily life, realises the dangers from the misuse of scientific knowledge; realises the need for protecting soils from erosion; realises the need of scientific ways of using environment and natural resources including conservation such as soils,. minerals, water and forests)

The scheme of evaluation which takes care of both the aspects—continuity and comprehensiveness of evaluation, is called continuous and comprehensive evaulation. The process of evaluation should start with pre-testing of the learner at entry level in the beginning of the session. Then evaluation may be done on continuous basis during an activity required for the competence being developed and also periodically to assess the development of the related competencies. You should keep record of pupil's progress. In one academic session, you may conduct five periodical tests in Classes I and II and six to seven such periodical tests in Classes III to V, in addition to the final test at the end of the session.

For Classes I and II, emphasis may be given on the oral techniques and observation of performance of the learner. In Classes III to V, continuous evaluation may be done employing various tools and techniques such as oral testing, performance-based test, paper-pencil test and observation techniques. Performance-based tests are suggested to assess learner's ability to master processes of observation, collecting data, reporting, classifying, inferring, etc. Tools such as observation schedule and rating scale are suggested to assess the values, habits, attitudes developed, which may be done in an informal way.

The module entitled 'The Living World' which follows, is an example on how to organise teaching-learning activities in environmental studies. However, it should be borne in mind that depending on available resources there can be a lot of modification in organising activities. The activities suggested in the module are not exhaustive.



The Living World

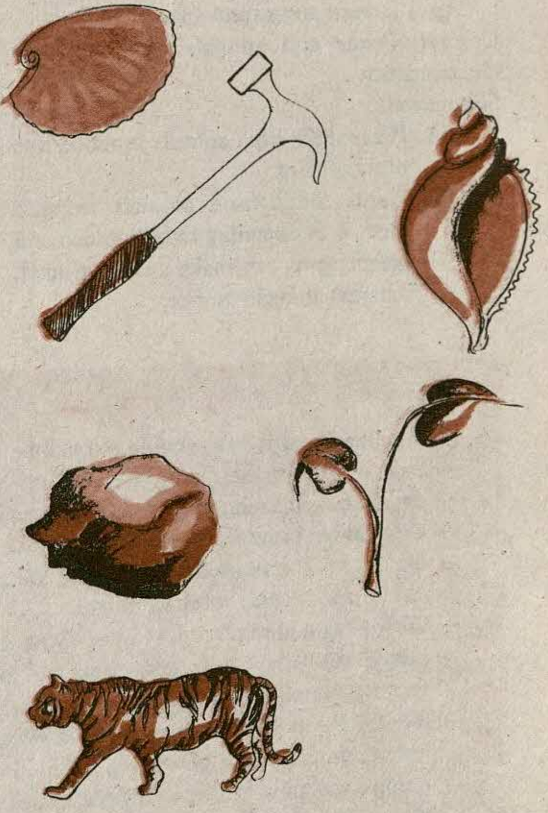
An Exemplar

Overview

In the present module emphasis has been laid on performance-based or skill-based activities which are child-centred. The module describes the activities on some competencies related to the living beings around us. These competencies are derived from Classes III-V. The children/pupils can be introduced to the living world and can be helped to differentiate between living and non-living things by taking them to a field or a garden for observation or through activities done in the classroom. This can be followed by interaction/discussion with children in the classroom. Some evaluation questions are listed for each competency to assess the pupil's achievement. The teacher may use these both during and after the activity as well as after the completion of the unit.

In this module, it is proposed to discuss the salient features of minimum levels of learning and associated competencies to be developed in each child/pupil. It is also proposed that through this module, the teachers will be helped to design teaching-learning strategies based on some specific activities related to these competencies. In this module, an attempt has been made to reflect the approach of integrating MLLs, teaching-learning strategies and their evaluation in respect of some concepts related to the content of Classes III-V. There are many other concepts related to the living world included in units on living things in Classes III-V. It is expected that teachers would organise many more activities depending on their resources.

Remember the module highlights child-centred, activity-based methods of learning.



Introducing the Major Concepts

Concept: Living and non-living things differ from each other.

Sub-concepts

(a) A living thing moves (on its own).

(b) A living thing grows.

(c) A living thing reproduces young ones of its own kind.

(d) A living thing responds to external stimuli.

(e) A living thing respires.

(f) A living thing requires food.

Concept: Plants and animals differ in some characteristics.

Sub-concepts

(a) Plants differ from animals in mode/type of movement.

(b) Plants differ from animals in their method of obtaining food/nutrition. All green plants can make their own food, whereas animals cannot.

Concept: Plants and animals are useful to us in many ways.

Sub-concept

(a) Animals are useful in transportation, irrigation, ploughing and harvesting of crops, etc.

(b) Plants are useful in many ways. For example, they provide food, medicine, shelter, etc.

Induction Questions

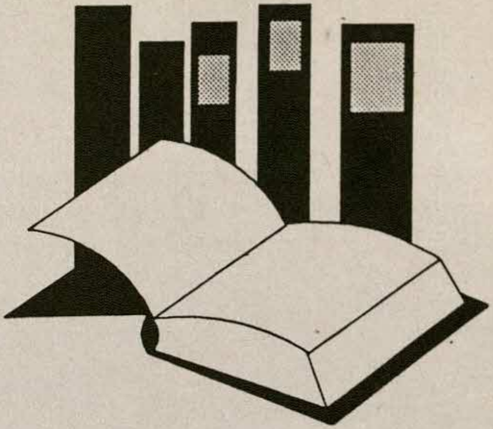
You may ask the following questions to students/ pupils ;

1. What are the things commonly available around you? (Prepare a list)
2. In what possible ways can you divide these into categories ? (e.g. living and non-living; natural and man-made; animals and plants) (Point out the basis of classification.)
3. What common features do you observe

Objectives

After going through this module you will be able to help the pupils to

- observe and list the variety of objects around them;
- differentiate between natural and man-made objects;
- differentiate between living and non-living things;
- list the main characteristics of living things, e.g. growth, reproduction, foods, response to external stimuli, respiration, etc;
- list the main characteristics of non-living things;
- classify the living beings into plants and animals;
- identify the main characteristics of plants;
- identify the main characteristics of animals;
- list the similarities in plants and animals;
- observe the growth patterns in plants and animals;
- identify the main parts of a plant;
- classify common plants on the basis of variation in their size and life span;
- observe the food habits of different animals and birds;
- observe the pattern of taking care of their young ones in animals; and
- study the ways in which plants and animals adapt to their environment.



in living things, such as, plants and animals ?

4. What are the similarities between plants and animals ?
5. In what ways are the plants different from animals ?
6. What are different parts of a plant? Name these.
7. What types of plants do you see around you in summer, winter and rainy seasons? Describe them.
8. How do animals around you feed themselves? (Types and ways of taking food)
9. In what ways do animals take care of their young ones ?
10. Ask the child about food habits of babies, a child and an adolescent, and an adult (quantity taken and type of food)
11. Observe germination of wheat seed.

Transaction Strategies

How will you teach?

Concept: Living things have common characteristics. Living things move on their own.

Activity: Make a child stand near the chair. You stand a bit away from him and then call both the chair and the child to come near you. Pose the following questions:

> Which of these will come near me? How does the child come near me? If I wish that the chair to come near me, what needs to be done?

Help the pupils to develop the idea that (i) the child can move on its own, and (ii) the chair cannot move on its own. Point out that movement is one of the characteristics of living things. Next ask them to give a few more examples of things which (i) move, and (ii) do not move on their own.

Evaluation: Which of the following things move on its own : bicycle, lion, cart, bullocks, train, camel, crow, button.

Living Things Grow

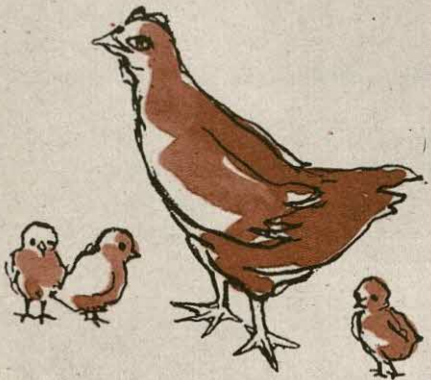
Material required: A potted plant, a stone, a scale/thread.

Activity 1: Ask the students to measure the length of a potted plant and size of a stone with the help of a scale/thread. After one week ask them to take the measurements again.

Discussion: What difference do you observe in the size of the plant? What difference do you observe in the size of the stone? Which of them grew in size ? Why ?

Activity 2: Ask the students to observe the young ones of animals as well as babies born in their neighbourhood and to observe them over a period of time.

Discussion: What changes do you observe especially with respect to size, in a baby and in the young ones of animals after one month? Make a list of the changes you observe. How did your younger brother/sister look like when he/she was born?



Through discussion help the pupil to infer that all living things grow. Over a period of time, a young sapling grows into a big plant. Similarly, the young ones of an animal grow into an adult animal.

A Living Thing Reproduces its Own Kind

Every living thing reproduces, i.e. gives birth to a young one of its own kind.

Activity 1: Ask the students to observe a cow and a calf, a hen and chickens.

Discussion: What do you call an offspring of a cow? What is an offspring of a hen called?

Activity 2: Ask the students to collect a few grains of wheat and sow them. Also, ask them to sow chalk pieces. Ask them to water these regularly for a few days and observe the changes, if any, in both the cases after a few days.

Materials Required: Grains of wheat, chalk pieces, petri-dishes, cotton/paper and water.

Discussion: What change do you observe on sowing the grains of wheat after a few days? How many plants have come up from one grain of wheat? What change do you observe on sowing a chalk piece? Make the children understand that a living thing reproduces its own kind.

A Living Thing Responds/Reacts to External Stimuli

Materials Required: A pointed wooden stick, torch, earthworms, cockroaches, etc.

Activity 1: Ask a student to prick gently a pointed wooden stick on the skin of the hand of another student. Ask the students to do the same activity on the leg of a table or a chair.

Discussion: What did the student feel when wooden stick was pricked on his/her hand? What does the student's sudden removal of the hand from the pointed object indicate? Did the leg of a chair or a table move away from the object when it was pinched?

Cite some other reactions of this kind. For example, focus a torch light on an earthworm/cockroach and also on chair/table and ask them to observe the effect. Ask them: What do you observe? What change do you observe in earthworm/cockroach and table/chair? Make the children understand that living things respond to external stimuli.

Material Required: Two potted plants

Activity 2: Take two similar potted plants. Place one plant in the lighted room and the other in a dark room or away from the light. Open one of the windows of the dark room so that light comes from one direction only. Ask the students to observe the results after five days.

Discussion: What change do you observe in plant in the lighted room?

What change do you observe in the plant kept in the dark room? What do you infer from these observations?

Make the children understand that living things–both plants and animals–respond to external stimuli.

Living Things Respire

Activity 1: Ask the students to observe the movement of their own chest while breathing in and breathing out. Also, ask them to observe such movement in animals, such as, cow or buffalo.

Discussion: What do you observe? What is the cause of the movement of the chest? Do you find such movement in an earthen pot or a water can? What do you infer from these observations?

Activity 2: Divide the students into two groups. Ask two or three students of one group to run around the playground and let students of other group stand. After five minutes ask them to stop running. Measure the rate of breathing of both the groups of students.

Discussion: What difference in breathing do you find in the student after running and the one who is standing. Students can be explained about respiration in fishes (its uniqueness). Make the children realise that animals also respire.

Materials Required: Germinating seeds in two test tubes/earthen pots, one rubber cork, cotton, water.

Activity 3: Give some germinating seeds to the students. Ask them to place them in test tubes/earthen pots with enough water to keep seeds moist. Close the mouth of one test tube with a rubber cork and that of the other test tube with cotton. Keep the test tubes in one corner of the classroom. Ask the children to observe the test tubes for a few days (2-3 days). Let them record their observations.

Discussion: What changes do you observe in the test tube plugged with rubber cork? What do you observe in the test tube plugged with cotton?

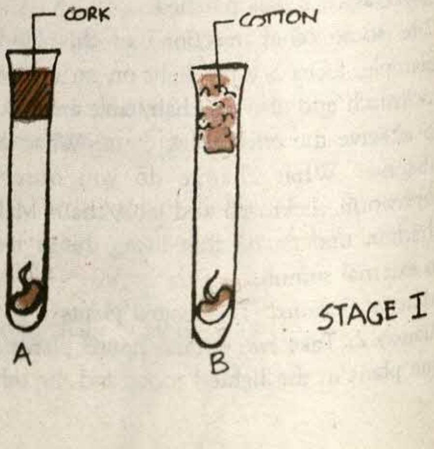
Help the students to infer that all living things such as human beings, animals, plants have certain common characteristics–movement, growth, respiration, reproduction and response to external stimuli. Whereas things like stones, chairs, tables, earthen pots which do not possess these characteristics are non-living things.

Take the students to nearby fields/gardens and ask them to observe things available around them. Help them to list the things they have observed and classify these as living and non-living things.

Concept: Plants and animals differ in some ways:

Sub-concept : Plants differ from animals in the mode of movement.

Activity : Ask the students to observe a dog going from one place to another. They are also asked to observe a tree.



Discussion: Can a plant move from one place to another like a dog? A dog can search and find its food by moving from one place to another but what about plants? Help the students to infer that animals can move from one place to another but most plants cannot move from place to place.

Sub-concept : Plants differ from animals in way of obtaining food/nutrition.

Activity : Ask the students to observe the feeding habits of goat, cow, cat, sparrow, and man, etc. in their locality. Also, show them charts related to the food habits of animals.

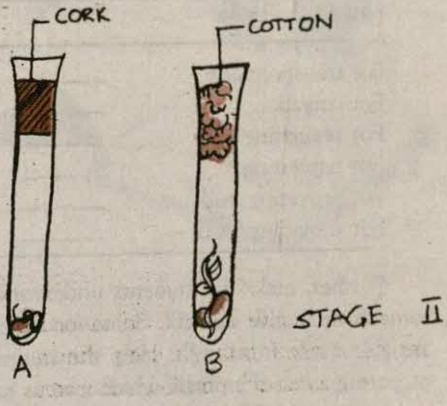
Discussion : What does a hen, a cow or a rat eat? How does a hen, a cow or a rat eat? What does a cat, a sparrow or an eagle eat? How does a cat, a sparrow or an eagle eat? What does a man eat? How do plants differ from animals in obtaining food?

Note: All green plants can make their own food. For this, they need water, sunlight and carbondioxide. Growing plants contain a green-colouring matter called chlorophyll which is essential for this process. Mostly, leaves are the organs where the food is prepared. The process by which a green plant prepares food is called photosynthesis. For growth, plants also need the various kinds of minerals which they obtain from soil through the root system.

Concept: Plants and animals are useful to us in many ways.

Sub-concept : Animals are useful in transportation, irrigation, ploughing and harvesting of crops, etc.

Activity : On the basis of observation and experience of the children help them in preparing a list of animals with their usefulness for us in the form of following table.



Uses		Animals	
For transportation	______	______	______
For irrigation	______	______	______
For ploughing	______	______	______
For harvesting	______	______	______
For providing milk	______	______	______
For providing food	______	______	______

Further, make the students understand that some animals give us milk. Some food products are also made from milk. Help the students in preparing a list of animals which give us milk.

Milk-giving Animals

1.	5.
2.	6.
3.	7.
4.	8.

What other products can be prepared from milk?

Concept: Plants and animlas need care and protection.

Sub-concept : Plants need care, adequate water, manure, warmth and proper sunlight which are essential for growth of plants.

Materials Required: Two potted plants of same kind, watering can/pot, manure, etc.

Activity 1 : Ask the students to take two potted plants of same kind and size. Mark these pots as 'A' and 'B'. Put adequate manure and water in pot 'A'. Keep the pot 'B' without water and manure. Observe both plants for a week. Record the difference in growth.

Discussion: Ask the students the following questions:

- In what way do these two plants differ? Make a list of the differences you observe. Of these two which one of the plants look healthy? Give reason.

Note: After this activity is over, ask the children to take care of these potted plants so that both the plants have optimum condition for growth. This will inculcate the value of environmental protection in children.

Through discussion help the students understand that water and minerals are essential for the growth of plants.

Materials Required: Four potted plants of same kind and size (e.g. coleus plant)

Activity 2 : Take four plants of same kind and size preferably coleus plants. Mark them as 'A', 'B', 'C' and 'D'. Keep plant 'A' in direct sunlight (in a hot place), plant 'B' in shady (cool) place, plant 'C' in a very cold place and plant 'D' in the normal condition. Leave them for a week. After one week ask the pupils to observe each plant and record their observation on changes in stem, leaves, flowers, etc. in each plant.

Discussion: Did all plants grow equally well? Which one of the plants was most healthy and which one was least healthy? In which part of the plant were the changes most noticeable? In what way did plant 'A' differ from plant 'B', 'C', and 'D'? Help the students to infer that both extreme heat and extreme cold are harmful to the plant growth.

Activity 3 : Crops and garden plants also need care and protection. Take the children to a nearby field, if possible, or to a nursery to observe how plants are cared for.

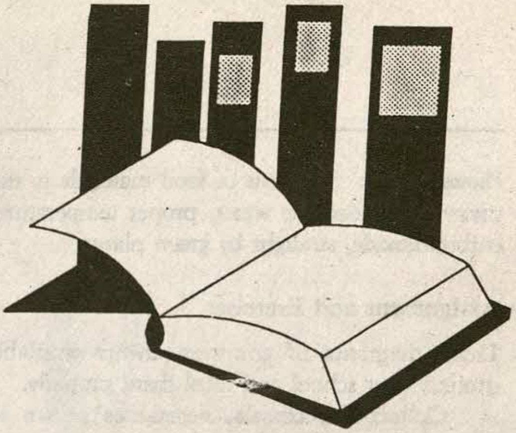
Discussion: Ask the following questions:

Who take care of crops/garden plants? What precautions do farmers/gardeners take to protect plants against diseases and other pests? What happens to crop/plants when there is excessive rainfall or long dry spells?

Note: These are some sample activities. However, there can be many more such activities.

Sub-concept : Plants are useful in many ways like in providing food, medicine, clothing, shelter, etc.

Help the students in preparing a table listing the names of plants available in their surroundings, and their utility in providing food, medicine, clothing, shelter, etc.



Key Words to be Remembered

Living things: Things/objects with characteristics like growth, respiration, movement, reproduction, adaptability and sensitivity

Non-living things: Things/objects which do not possess the above characteristics

Characteristics : Specific properties of the object/ thing.

Growth: Irreversible increase in shape and size.

Life span: Period between birth and death of living beings.

Season: Particular period having similar/same weather conditions.

Reproduction: Process of producing similar offsprings by living beings.

Adaptability: Adjustment with the local environment by living beings.

Stimuli: External factors that tend to produce response/reaction in the living beings.

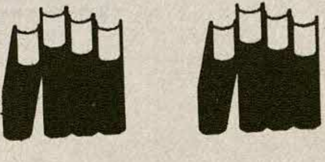
Food habits: Ways of taking edibles/eatables.

Movement: Change in position.

Care of Young ones: Inherited behaviour of protecting the new borns.

Environment: Things all around us available in the immediate as well as far/remote surroundings.

Respiration: Converting/ releasing energy from food (breathing).



Photosynthesis: Synthesis of food materials in the presence of adequate water, proper temperature, corbondioxide, sunlight by green plants.

Assignment and Exercises

Draw diagrams of common things available around your school and label them properly.

- Collect the cereals, vegetables grown in winter, rainy and summer seasons.
- List the plants of medicinal importance in your locality.
- Collect the common fruits available in your locality and draw their diagrams.
- List the milk-giving animals available in your local environment.
- Describe the use of animals in producing manure.
- Describe the importance of animals in your daily life with reference to (1) transportation, (2) irrigation, (3) ploughting, (4) harvesting, (5) producing manure and (6) leather.
- List ten things which you see in your surroundings.
- What characteristics differentiate a plant from an animal?
- Make a list of five each of the living and non-living things of your locality.
- What type of animals and plants have you seen growing in a field or a pond?
- How do plants prepare their own food?
- Name the animals which depend on plants for their food.
- Make a list of animals in your locality and indicate things that each one of them eat. Mention any speciality in the way of eating as observed by you.

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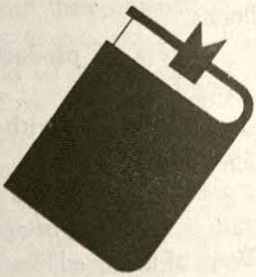


Art Education

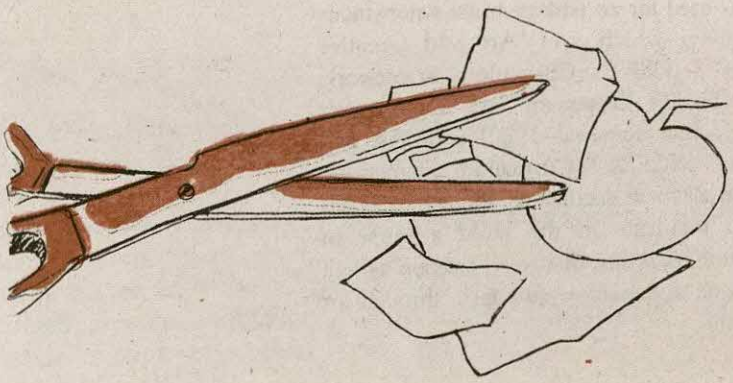
R. K. CHOPRA

Overview

It is important to know the child, his environment and the scope of art education in order to appreciate the approach adopted for planning the art curriculum at the primary school stage.

There are many interesting revelations about the child. He is now considered a feeling and thinking human being with a strong expressive urge. The things he wants to express are those which interest him and catch his fancy in his own environment. This quality of the child is manifested in his play-activities where he expresses himself subconsciously by way of rhythmic movement, gesticulations, humming of tunes and scribbling of shapes and forms. These are creative impulses which grow in him naturally. Art being an expressive medium, it appeals to his/her instinct and he/she uses it for self-expression.

The environment of the child is full of a variety of activities to which he reacts constantly and forms his ideas about them. He deduces certain meanings and relationships which become novel due to his own emotional reactions. He observes natural phenomena, flora and fauna, and the general life involved in a variety of activities. He comes across various social and cultural functions of the community. He has a



special fascination for them. He also observes some public celebrations on national days. All these are his source material for ideas. He is curious to know a lot about them and feels an urge to express them.

Art education has taken cognizance of the child's inherent capabilities, his urges and interests, and evolved an approach to provide him with medium of self-expression. The various forms of art integrated in this subject are–pictorial, decorative, plastic and performing which now serve as viable media for free self-expression. This approach to art education has an element of creativity which is involved in every process of doing the art activity. This is a departure from the earlier trends of teaching art which were mainly skill-based. But now art education is child-centred and process-based for it calls upon the child to choose, to organise and to express through art activity with his own inherent ability. This new approach recognises one's own experience and inner world as a source of subject-matter and art for giving personal expression of teachings, thoughts and ideas. This approach assumes that every child has an ability to express through art because it is an inborn quality very much inherent in him. Thus, art education in its present concept is a means to enhance individual's creative faculties since creativity is a part of the process of expression through art.

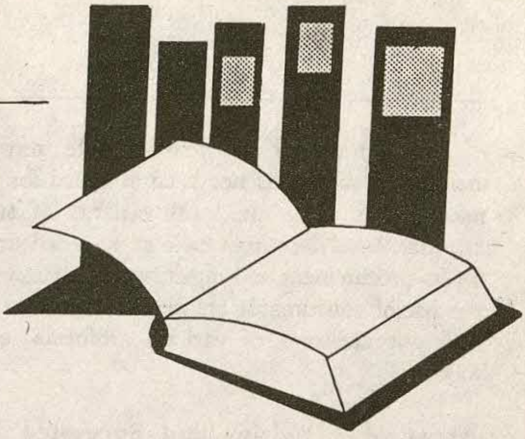
Ever since the Kothari Commission Report, the terms used for art education are synonymous of creativity which are: 'Art and Creative Activities' (NCERT's Curriculum Framework, 1975), 'Creative Expression' (NCERT's Project of Curriculum Renewal–1980) and 'Art and Creativity' (NCERT's Curriculum Framework, 1988). In all these documents, the emphasis has been to inculcate in the child a sense of imagination, curiosity, discovery, creation as well as aesthetic appreciation and taste through art curriculum.

Aims and Scope of Art Education

The Framework of National Curriculum of Elementary and Secondary Education (NCERT, 1988) has envisaged the aim and scope of art education under the sub-title 'Art and Creativity' in the following terms:

> The aim of art education should be to sensitize the students so that they may learn to respond to the beauty in line, colour, form, movement and sound. The study of art and cultural heritage may enable the learners to appreciate and understand each other. The curriculum should aim at developing awareness of and interest in a wide variety of fine arts both at the classical and the folk level. para 1·3·4, page 4

The outcomes of art curriculum would result to realise two broad aspects–(i) to inculcate in the child an appreciation for beauty; and (ii) to give him the experience of the creative process. Each of the art-forms provides the child a unique experience which is in a way a training of seeing, sensing, feeling and finally doing the art. This experience of art involves the child in two ways–(i) the act of selecting the objects of inspiration for giving an expression, and (ii) the act of



experimenting with media and materials. These experiences of art expression go on gradually refining the sense of discrimination and aesthetic appreciation in the child and also help him develop his creative faculty.

Material

The syllabus of Art Education is composed of four areas of art-forms which are pictorial (drawing and painting), decorative (printing, collage and decoration), plastic (claymodelling, construction, etc.), and performing (music, song, dance and drama). All these activities require certain types of material. This material falls in two categories–(i) material used directly by the children for expressing themselves in different art activities, and (ii) material used as accompaniment with their performance.

The first type of material is mostly of a consumable nature and has to be replenished from time to time. The second type of materials consist of certain musical instruments which serve as a playback for some activities of performing art.

Under Operation Blackboard (OB), the materials, supplied for art education are as under.

(i) Teacher's Handbooks on Art Education for Classes I-V.
(ii) Harmonium
(iii) *Tabla/Dholak*
(iv) *Manjira*

Objectives

The write-up on art education developed to help the participants to

- get acquainted with some major concepts of art education such as, the approach, aim, scope, etc.
- familiarise themselves with a variety of art materials required/supplied for organising activities in different areas of art;
- plan activities by selective use of these materials; and
- develop an insight to recognise children's capacity to use these art materials and to identify the modes of creative expression.

The material of consumable nature mentioned above has not been supplied for the reason that there are local variants of such material. Local resources have to be relied upon for its procurement and replenishment. However, the list of consumable art material required for different activities of various art-forms is as follows:

Areas of Activities and Suggested Art Materials

(i) *Pictorial Art (Drawing and Painting):* Pencil/charcoal/*kalam* and ink/wax colour/pastel colour/powder colour and gum, flat brushes, white paper/brown paper/chart paper/acitivity book, etc.

(ii) *Decorative Art (Printing, Collage and Decoration):* Vegetables (potato, onion, lady's finger), knife, poster colour/powder colour and gum, coloured papers/cloth cuttings, waste printed material/natural materials, etc. coloured husk/coloured powder/coloured sand/flowers and leaves, etc. earthen pot, *khariya matti*/chalk matti/chalk clay, etc. white paper/chart paper/brown paper, brushes, etc.

(iii) Plastic Art (Clay-modelling and Construction): Potter's clay/pond clay, modelling tools, etc, chart paper/hard card, scissors, gum/fevicol/flour paste, thread, poster colour, brushes, soft cane/bamboo stick/twigs, etc.

*(iv) Performing Art (Music, Song, Dance and Drama):*Percussion instrument/harmonium, *tabla*, *dholak*, cassettes/tapes, records, costumes of local and regional dances, stage decoration material, make-up items, etc.

Reading Material

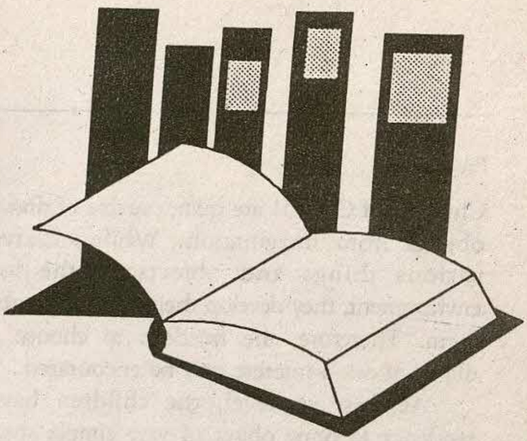
As part of library books supplied under Operation Blackboard is a set of Teachers' Handbook on Art Education for Classes I and V. The contents of these handbooks explain various major concepts of art education including the approach to curriculum, syllabus, methodology, evaluation scheme, activities, plans from various forms of art. These handbooks are also appended with designs of 'Activity Books' which are to be printed separately for use by the students in the classrooms. Each of these activity books has corresponding activities which are in the handbooks.

A video film entitled 'Art Education' has been produced by the CIET in collaboration with the DPSEE (NCERT). This film shows strategies of organising various art activities in the classroom. It also explains salient aspects of art education. This film was developed as part of the material for the orientation programmes for the teachers under PMOST scheme. The film shows in sequence the activities in the areas of (i) Drawing and painting, (ii) Printing, collage and floor decoration, (iii) Clay modelling and sculpture, and (iv) Song, dance and drama.

Methods

Children have to work with different art materials to express themselves through one or the other form of art. A few activities are demonstrated below to show the processes involved in their development. At the same time, these will give an idea about the type of art material used. It may be noted that these demonstrations have limited use in the classroom. Once the children get acquainted with the processes, they will be able to evolve their own techniques and modes of expression.

In order to organise activities in different art-forms, a congenial environment should be created in the classroom. This can be achieved by introducing two relevant methods, i.e. (i) Free Expression method, and (ii) Specified Topic method. Both these methods provide freedom to each and every child to make use of his own resources and capabilities to express through the medium of art. No doubt, the free expression method offers a wide scope to the child to select any idea and subject-matter, the specified topic method too provides ample choice if the topic given is familiar to all the children in the class. As far as the freedom to use the art material is concerned, both these methods give equal scope to every child to discover his capability and put them to the best use.



Teaching Aids

The Teachers' Handbooks supplied under OB contain a large number of specimens of children's art expression. These would give an idea of the nature and type of expressions they have at different age levels. Further, for the benefit of teachers, various processes of art activities have been explained with the help of illustrations showing step by step progress of these processes. Occasionally, children may be shown traditional art, toys and puppets, fairs and festivals of the local community. They may be encouraged to see children's art exhibitions.

Demonstration Activities

The activities from various art-forms given below are required to be organised with children in the classroom. The participants may like to do them by following the processes explained in them. The participants will be able to know the efficacy and use of materials.

A. PICTORIAL ART

Demonstration 1: Class II

Minimum Learning Outcome

The Learner should

- draw one or two objects from imagination.

Activity

Draw any object of your choice.

The following materials would be required for performing this activity: Pencil, pastel colour/crayon colour, paper/activity book, etc.

Process

Children of Class II are quite capable of drawing objects from imagination. While observing various things and objects in the local environment, they develop their own liking about them. Therefore, the freedom to choose any object of one's interest may be encouraged.

At this age level, the children have a tendency to draw object of very simple shapes. These look like symbolic expressions. But all the same these are recognisable with the intended object or thing they have in mind.

Ask some enquiring questions from some children in the class to know what things and objects they are interested to draw. After knowing their objects of interest, tell them to begin the work. Ensure that they draw sufficient large drawing in the space of paper.

- Those children who may appear non-starter or slow may be given guidance on individual basis so that they may revive their objects in the 'memory.

Demonstration 2 : Class IV

Minimum Learning Outcome

The learner should

- make painting on an assigned scene/ situation from imagination.

Activity

Make a painting of man or woman at work.The following materials would be required for performing this activity: Pencil, rubber, pastel colour/crayon colour, paper/activity book, etc.

Process

Children of this age-group generally have a tendency to make a scheme in order to present their ideas. They arrange figures in their schemes that show movement and action. Though they continue to evolve symbols to represent figures and other things but these appear more concrete with life and drama.

This mode is called schematic expression which shows unfolding of one's feelings and reactions about any scene or situation.

Ask some individuals in the class to relate the scenes and situations assigned to them. They may tell different situations when they saw the man or woman at work. Individuals' difference may be encouraged.

- When they are ready with their ideas, ask them to begin the work.
- They may be told to develop their own ideas rather than copying or watching others.

(Some specimens of drawing and painting drawn by children may be shown to them so that they get general modes of expression at different age level).

B. DECORATIVE ART

Demonstration 3 : Class II

Minimum Learning Outcomes

The learner should

- make design by stamping a crumpled paper-ball;
- recognise the qualities of a good design such as symmetry, harmony, rhythm, etc.

Activity

Make an overall design with a crumpled paper-ball in single colour.

The following material would be required for performing this activity: Ink pad/poster colour, brush, paper/activity book, etc.

Process

- Take a piece of paper and roll it between the palms till it becomes a small crumpled paper-ball.
- Select any textured surface on the ball and stamp it on ink-pad or poster colour.

- Print the impression lightly on the top corner of the paper, continue making these impressions side by side leaving uniform spaces between them. When the top line is printed, likewise make the impressions below the first line till the whole papet is covered. The final outcome will be an overall design showing such qualities as symmetry, harmony, rhythm, etc. because of uniform spaces and impressions.
- Ask the participants to make their own designs by following the process demonstrated.

Demonstration 4 : Class III

Minimum Learning Outcomes

The learner should
- print pattern/design with shapes carved on half potato;
- appreciate different colour combinations in printed patterns/designs.

Activity

Make an overall design in two colours with half-cut potato.

The following materials would be required for performing this activity: Poster colour, brush, colour-mixing plate, potatoes, knife, paper/activity book, etc.

Process

- Cut a potato into two halves. Curve out a shape on one half of the potato and another shape on the other half of the potato.
- Print the first shape on the top corner of the paper by stamping impression with one colour, then print the other shape using another matching colour. Leave suitable space between these impressions.
- Repeat printing these impressions using alternate colours and leaving uniform spaces till the top line is ready.

- Now reverse the colour below the first line.
- Ask the participants to print their own design following the above process.

(Some specimens of designs made by children of different age-groups may be shown to the participants.)

Demonstration 5 : Class II

Minimum Learning Outcomes

The learner should

- depict any object in a simple collage.

Activity

Make a collage of a bird or a flower with small pieces of coloured paper.

The following material would be required for performing this activity: Coloured paper/waste printed coloured paper, glue, activity book, etc.

Process

- Draw shape of any bird or flower on the paper. See that the shape is sufficiently large so that small pieces of coloured paper are pasted in it.
- Tear off coloured papers into small pieces.
- Paste these pieces one by one within the space of the drawn shape to give the effect of the intended object.
- The final outcome will show texture and relief of a decorative bird or flower.
- Ask the participants to make collages of different objects.

Demonstration 6 : Class IV

Minimum Learning Outcomes

The learner should

- depict an idea/natural scene in a simple collage.

Activity

Make a collage depicting a natural scene with small cut-outs of coloured paper. (A natural scene may comprise a mountain range, trees, fields, huts, human and animal figures.)

The following material would be required for performing this activity : Coloured paper/waste printed colour paper/used calendar, scissors, glue, paper/activity book, etc.

Process

- Draw shapes of objects on different coloured papers. Individuals may have different scenes in their mind. Cut these shapes in appropriate sizes.
- Arrange the cut-outs on the surface of a paper to make a pleasing composition.
- First paste the cut-outs of the background objects and then of the foreground. Allow overlapping if some parts of the background shapes are hidden behind the foreground shapes. The collages made would show individual's ideas.
- Ask the participants to make collages by following the process. (Some specimen of collages made by children of difference age levels may be shown to the participants.)

Demonstration 7 : Class II

Minimum Learning Outcome

The learner should

- make simple forms of any vegetable or fruit in a clay or plasticine.

Activity

Make the form of any vegetable or fruit.

Process

- Take a lump of clay and give it a form of any vegetable (lady's finger, brinjal, carrot, etc.) by rolling and patting.
- The forms made will show symbolic appearance of the vegetables.

- Ask participants to make models of vegetables and fruits by rolling, patting, squeezing the clay lumps.

Demonstration 8 : Class III

Minimum Learning Outcome

The learner should

- Make simple objects in clay as assigned to them.

Activity

Make a model of a bird in clay.

The following materials would be required for performing this activity: Plasticine/potter's clay, wooden modelling tools, knife.

Process

- Take a lump of clay and make different parts by visualising (imagining) the form of any bird. This can be done by pressing and patting various parts or by removing or cutting excess clay while shaping them. (Sometimes, different parts are made separately like the neck, body, legs, etc. and joined them together with the support of small pieces of twigs or match-sticks.)
- Make the leg portion solid so that it may bear the weight of upper body.
- Ask the participants to make models of birds, animals and human beings as they may like to choose any one object.

Demonstration 9 : Class III

Minimum Learning Outcome

The learner should

- Make a paper mask.

Activity

Make a paper mask to show any humorous character.

The following materials are required for

performing this activity: Poster colour, brush, pencil, rubber, thread, scissors, chart, paper, etc.

Process

- Draw a life-size shape representing the face of a man or woman. Teacher may check the oval or circular outline drawings of the children.
- Ask them to fill these shapes with features like eyes, nose, mouth, moustache, etc. Allow them to enlarge or twist any of the features.
- Paint the details in bright colour scheme.
- Cut the painted mask along the outer fringe and make small holes for the eyes.
- Tie small thread on both the ears.
- Ask them to put on masks on the faces to show the humorous characters.
- Ask the participants to prepare masks showing human or animal characters.

(Some specimens of children's work in clay-modelling and mask-making may be shown to the participants.)

Demonstration 10 : Class I

Minimum Learning Outcome

The learner should

- mimic the sound and action of a human being or an animal.

Activity

Mimic the voice or action of any human being or animal of your choice.

Process

Children have a natural tendency to imitate the behaviour (voice and action) of people, animals and birds.

- Ask each and every child in the class to act or behave like any person or animal they have some fancy for. Ask them to imitate action as well as voice of such a character.
- Ask the participants to try to enact any role of character they like.

Demonstration 11 : Class III

Minimum Learning Outcomes

The learner should

- sing the National Anthem;
- show respect to the National Anthem by standing at attention when it is being sung or its tune is being played.

Activity

Sing the National Anthem in a group.

Harmonium, *tabla/dholak*, etc. would be required to perform this activity.

Process

- Make a group of 15-20 children. Ask if anyone knows playing harmonium or *tabla* for the background music.
- Sing yourself the first line and ask the group to repeat it with proper notation and rhythm. Follow the procedure for other lines.
- Ask the group to sing the whole song and watch and correct working, rhythm, etc.
- Ask the participants to sing the National Anthem in a group in a few sessions.

Demonstration 12 : Class V

Minimum Learning Outcomes

The learner should

- participate in folk dance/song popular in the local community;
- appreciate the importance of folk dances/songs as part of our cultural heritage.

Activity

Perform a folk dance/sing a folk song.

Dholak/tabla for rhythmic beats would be required for performing this activity.

Process

- Make a group of 10-15 children. Ask if anyone knows playing *dholak* or *tabla* in the class to give accompaniment.
- Show the movement of steps and body parts of the local dance form. Take the help of any other teacher or resource person from the community.
- Ask the group to practise, watch and correct movement, wherever necessary, till the group has learnt the performance.
- In the case of folk song, the working and rhythm may be initiated with resource guidance. Ask them to practise in a few sessions.
- Ask the participants to form small groups and perform the folk dance or sing the folk song of their community.

(Show some photographs of children's performances in group singing, enacting role-play and giving a dance performance in a group.)

Evaluation Guidelines

The basic aim of art education at the primary stage is to make the child aware of what is good and beautiful in the environment. The activities planned should, therefore, help him discover and identify his sensitivities and preferences through experience of various media and materials and to optimise his own capacity in one or more forms of art.

In view of the above, evaluation in art education should focus on participation and various modes of expression adopted by the child rather than on perfection. The teacher may make use of teacher-made check-list or rating scale keeping in mind the broad guidelines assumed.

- Evaluation in art education envisages the achievement and growth of each child as a unique phenomenon and it has nothing to do with inter-comparability.
- It emphasises on the individual's self-

expression and what is inherent rather than judging any specific skills of art.

- The basic aim of pupil evaluation is to enhance children's interest in the art activities and to gradually build their confidence for better participation each time.
- An essential element in the teaching strategy of this subject is to provide free and uninterrupted opportunities to the children for expressing themselves. In the same way, the evaluation by the teacher is to see their free exposition of ideas and the uniqueness of expression on individual basis.
- The children show definite characteristics in their art expression at different age levels during the primary school stage. This is an inherent ability which grow in them and these modes of expressing themselves through the medium of art. The teacher is required to treat such modes of art expression or characters as basic evidence to be merited as normal of creative nature. The expected characteristics of art expression of the children in different classes are as follows:

The characteristics of natural art expression given below are to be considered as basic evidences for evaluating the art work. The amount of creative qualities is to be further seen in the light of such elements as the originality of the child's idea; his ability to grasp the idea; the details shown in expressing the idea; the effort and medium used in communicating the idea; the overall effect or appeal in the expressed idea, etc. These aspects may be judged keeping in mind the child's age, his interests and experiences.

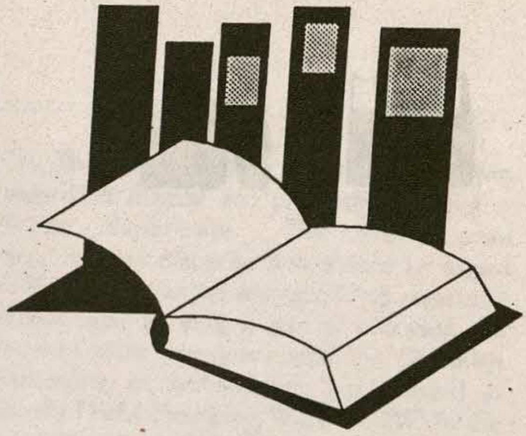
While assessing the qualities as discussed above, the remarks given should be on individual basis. These remarks should be in clear and unambiguous terms. They may range from 'A' outstanding to 'B' (fine), C (good), D (Average) and E (Minimum). After the activity has been organised and the work assessed, the achievement of each individual may be recorded in the form of grades on the above five-point rating scale.

Questions to Evaluate Teachers' Comprehension

1. What are the essential aspects of the present approaches to art education ? How would they help children develop their creative expression?
2. Discuss the aims and scope of art education envisaged under the curriculum.
3. What are the latest methods to teach art in the classroom? Discuss.
4. What do you understand by the terms 'child-centred' and 'activity-based'? Explain.
5. Children have natural characteristics of art expression. Name these characteristics with agelevels of the children at primary stage.
6. What are the types of materials used in the art activities? Prepare a list of the materials used in various art-forms.
7. Discuss the process of print material in two colours. Name the qualities of a good design.
8. What is a collage? Explain the process of making it.
9. You have important roles in organising art activities. Would you motivate children and give them guidance in the classroom ?

Classes	*Characteristics*
Classes I and II (6 to 7 years)	Symbolic expression
Classes III and IV (8 to 9 years)	Schematic expression
Class V (10 years)	Beginning of realism in expression

10. What are the criteria spelled out in the 'Evaluation Guidelines' in art education? Discuss.



Suggested Readings

As part of library books supplied under Operation Blackboard, is a set of Teachers' Handbooks on Art Education for Classes I-V. The contents of these handbooks explain various major concepts of Art Education including the approach to curriculum, syllabus, methodology, evaluation scheme, activity plans for various forms of art. These handbooks are also appended with the designs of 'Activity Books' which are to be reprinted separately for use by the students in the classroom. Each of these activities has corresponding activities which are in the handbooks.

A video film entitled 'Art Education' has been produced by the Central Institute of Educational Technology (CIET) in collaboration with the Department of Pre-school and Elementary Education (DPSEE), NCERT. The film charts strategies of organising various activities in the classroom. It also explains salient aspects of art education. This plan was developed as part of the material for the orientation programme for the teachers under PMOST scheme.

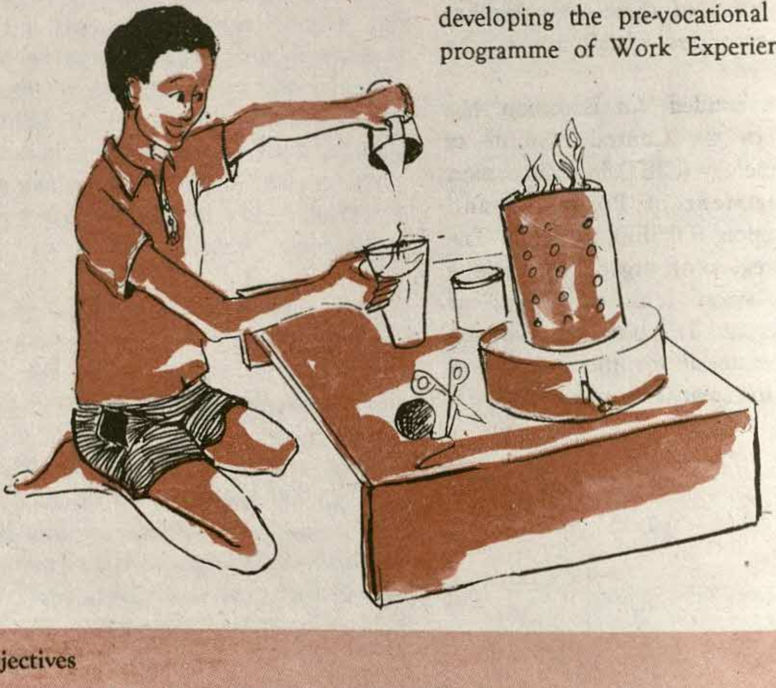
Work Experience at Primary Level

D. D. YADAV

Overview

Work Experience (WE) has emerged as a significant area of school curriculum. Emphasis is being laid for inculcating right type of attitudes towards manual work and development of productive skills. The revised Programme of Action (POA, 1992) stresses this need and recommends measures for effective transaction of this part of curriculum.

This module provides you with the information on the concept and role of the teacher for its effective implementation. Seeking community involvement, selection of activities for the school and for the students, and evaluation of the students have also been suggested. Besides developing the pre-vocational skills, a good programme of Work Experience is likely to



Objectives

After studying this module you will be able to
- understand the concept, objectives and need of the work experience programme;
- select appropriate activities for pupils as well as schools;
- devise ways for the disposal of work experience products;
- seek community involvement in the work experience programme;
- understand the evaluation techniques for this area.

promote the social and psychological development of the child, and it keeps pace with the developmental trends in technology and education.

This module will help you identify the right type of activities and the strategies for organising these activities.

Induction Questions

1. Do you know the meaning of work experience?
2. Have you identified work experience activities relevant to your environment?
3. Have you identified the need and problems of society?
4. Have you identified the local resources which can be tapped for effective implementation of work experience in your school?

The Concept of Work Experience

Manual work was part and parcel of educational system during the ancient period. It was considered as important as intellectual activities. The philosophy was 'Education in and through life'. During the British period, manual work lost its position in the system. Mahatma Gandhi again reviewed the significance of manual and productive work. He considered that all educational activities should centre around productive work.

The Kothari Commission (1964-66) conceptualised manual and productive activities as Work Experience. The Commission recommended that education should be related to life and productive activities. Work experience should form an integral part of education. To re-orient work experience with the Gandhian philosophy, its nomenclature was changed to Socially Useful Productive Work (SUPW) by the Iswar Bhai Patel Committee. The concept was changed as 'meaningful manual work resulting in either goods or services useful to the community'. The National Policy on Education (NPE-1986) renamed SUPW as Work Experience and reiterated the concept as, 'meaningful manual work, organised as an integral part of the learning process and resulting in either goods or services useful to the community'. It was recommended as essential component at all stages of education and was to be provided through well-structured and graded programmes. It would identify the activities in accordance with the interests, abilities and needs of students. It was conceived that the level of skills and knowledge would be helpful in the entry of learners into the workforce.

Points to Remember

In essence, work experience is to be so planned that

- it has concern with learning process;
- it is not merely experience of work, but experiences through work;
- it helps in the all-round development of the personality;
- it reduces class discrimination, by achieving dignity of labour;
- its roots lie in developing pre-vocational skills;
- it brings schools close to the world of work;
- it keeps pace with science and technology;
- it helps in increasing production;
- it helps the child to become self-reliant;

- it provides opportunity to the teacher for implementing learner-centred approach;
- it provides opportunities to the child to work according to his interest, ability and attitudes.

Self doing Activity for the Teacher

- Identify the need and importance of work experience.
- Write atleast two objectives pertaining to work experience under–knowledge, understanding, skills and attitude domains.

Scope for the Selection of Work Experience Activities

The students always observe the community members, who are always doing some work to earn their bread. The scope of work experience activities goes beyond the school boundaries. The need and problems of family and community to which the child belongs enters inside the scenario of education through work experience and try to solve its problems and meet its needs.

The Work Experience (WE) activities draw content from environmental studies and its application, experimentation with material and work practice. The work experience will be purposive if its activities meet the educational requirement, i.e. the activity should not only be performed mechanically but intelligently. These activities are meaningful when related to the needs and problems of the learner and the local community. The activities should also be predominantly manual in nature and should result in some service or production.

The success of work experience programmes to a great extent depends on the proper selection of the activities. The activities would depend upon the availability of natural, physical and human resources in the locality and the socio-economic background of the locality.

Self-assessment

- Identify the WE activities keeping in view natural resources available around your school.
- Identify the WE activities keeping in view the physical resources such as factory, agriculture, shops and other work situations around your school.
- Identify the WE activities keeping in view the human resources available in your locality such as mechanic, agricultural instructor, *Gram Sewak*, etc.
- Identify the WE activities for solving some problems of the community.
- Identify the WE activities which can be performed inside the school keeping in view the space and resources of the school.
- Identify some activities that you can demonstrate in the camp.

Like the other learning experiences of education, WE also needs formal as well as informal experiences to be organised by the teacher for desirable outcome. Formal experiences may be provided within the school time table and the informal experiences are gained spontaneously from the social environment. For providing WE experiences not only the experiences within the school, but the experiences out of school such as home, neighbours, community, factory, etc. should be included. The study of the world of work through observation and inquiry is an important aspect at the primary level. The students start getting the knowledge and required skills as soon as they observe the maintenance and production work in society. Knowledge of types of work, raw material, tools, maintenance of things ought to be acquired through observation. Students should be encouraged for exploring the world of work, services around, workers engaged in them, and the material and tools being used.

Experimentation with materials, tools and techniques at the primary stage may be encouraged. Creative and self-expressional activities be emphasised.

Demonstration method is also very useful for skill development. Working procedures and techniques should be demonstrated by the teacher followed by work practice by the students.

Project method is also a good method for providing the learning experience while teaching WE. Keeping in view the nature of children, their attitude, interest and ability to work, the project may be chosen. It should be a graded one. For example, beautification of the campus, cleanliness, etc. These projects may be chosen with the help of children.

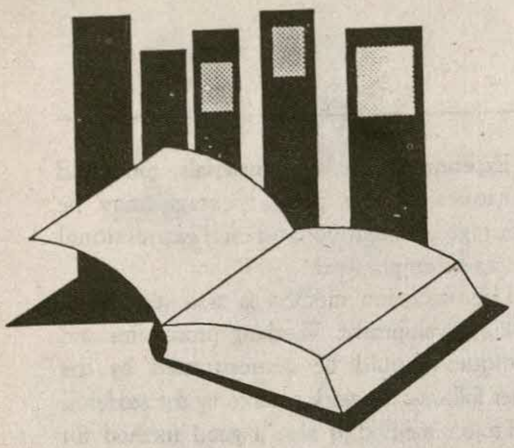
Problem-solving approach is the key for the success of the programme. Children should feel their own needs and problems of their home, school and the community. They should be led to arrive at the solution of these problems. The process of planning, analysis and detailed preparation at energy stage should be adopted.

Self-doing Activity

Write down five activities and what methodologies you would adopt in teaching these.

Facilities for Work Experience

There is need of equipment, tools and other teaching aids for work experience programme. Some facilities are available in the schools. At the primary stage the students may be encouraged to bring their own materials because at this stage, the nature of the activities is such that they do not require much sophisticated tools. Schools should gradually develop their own resources. Utilisation of community resources for effective implementation of the work experience programme is quite necessary.



Disposal of Work Experience Products

Production of goods is an important outcome of work experience programme. Either the goods should be utilised by the children or they can be disposed of through cooperative stores in schools and exhibition-cum-sale in the school. If the goods are perishable their quick disposal is required. The money may be utilised for building the rolling fund and may also be given to students as an incentive.

Evaluation

The evaluation in this area should be a continuous process. The internal teacher should conduct the test and the score or grade should be shown in performance record of the student. More weightage should be given to practice rather than theory. While evaluating the student, paramount importance should be given to attitudinal development. During social service activities, factors like democratic attitude, leadership, participation in the group activities, organisation of work, etc. should be judged.

Suggested Proforma for Evaluating the Pupils

The teachers should keep systematic records of the pupils' progress while performing WE activities. Pupils can also keep their record on the following proforma, which can also be utilised by the teachers, if needed.

1. Name of the pupil
2. Class
3. Name of the project
4. Date of starting the project
5. Date of completion of project
6. Tools used
7. Raw material used, if any
8. Method adopted
9. Cost of production
10. Use of product or service
11. Difficulties, if any
12. Teacher's remarks
    - Time — Material
    - Tools — Discipline
    - Habits

    Overall grading

Signature of the Teacher

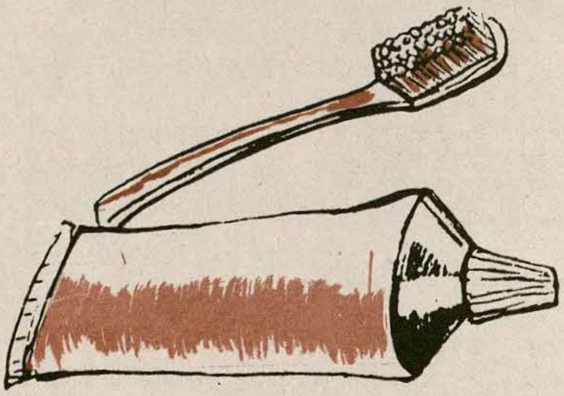
Health and Physical Education

P. A. CHAR

Overview

The purpose of this module is to acquaint you with the basic concept of health and physical education and its importance in life. Health and physical education has been one component of our curriculum at the primary stage. The concept of health and physical education may not be clear and may create confusion so it is necessary to make simple and clear presentation regarding the concept of health and physical education, and the role of the teacher and the school to inculcate good habits in the child so that the child from the very beginning internalises these habits for his/her well-being.

The teacher is supposed to cite examples and provide factual information about different aspects of health and physical education while teaching subjects such as environmental science, social studies, language. This exercise of self-awareness from time to time and frequently will help in a big way to achieve the objectives of health and physical education relevant to the primary stage.



Objectives

1. To make students experience that vigorous activities result in
   - improved functioning or organic systems of the body;
   - joy and pleasantness and make more friends;
   - create hunger and induce better sleep.
2. Students to know
   - the constituents of food and how they help children to grow taller and stronger;
   - how and when to eat food and how to choose good food.
3. Students to know
   - role of teeth in eating food;
   - how animals get their food and eat them;
   - the structure and type of teeth animals have;
   - clean teeth make us smarter and is a sign of good health.
4. Students to know
   - that clothes help us look smarter and keep warm/cool;
   - maintaining wrinkle-free and clean clothes, and wearing various types/styles for different seasons and occasions add to our personality.
5. Students to know
   - that clean skin indicates the condition of one's health, particularly pink and shining skin;
   - that keeping face, hands, fingers, feet, toes clean and nails trimmed, well-combed hair add to their smartness.
6. Students to acquire skills of
   - sweeping the floor with broom/s;
   - wiping dust off furniture and walls;
   - keeping surroundings clean;
   - avoiding spitting, urinating, defecating in public places;
   - covering mouth and nose while sneezing and coughing, and while others cough and avoiding smoke;
   - washing hands and face.
7. Students to acquire social manners as
   - greeting and showing respect even to animals and plants;
   - an upright bearing, appear smart, a pleasant smile, well-co-ordinated and cultivated movements and, concern and respect others' expressions and the points of view.

Induction Questions

1. What happens when we run fast ?
2. Why does a person breathe fast and deep while doing a vigorous activity?
3. What is breathing? What do we gain by breathing?
4. What is hunger and thirst?
5. What happens to the food we eat? Why do we feel sweetness in sugar or milk?

Definition and Explanation of the Concept of Health

Health is the resultant of two forces, the high degree of the condition of all systems of the body and the high level of functional fitness. Growth is possible only when all the systems of our body function well in top gear. It needs a correct quantity and quality of nutrients through food. This as you know is known as balanced diet. Besides this, our body needs enough rest and time to repair the wear and tear and to grow. This means we need (i) vigorous activity, (ii) nutrition, and (iii) rest. It is not only physical health which will be maintained through these activities but also mental fitness. For that the body also needs joy and pleasantness from the company of others. Man by nature is a social being. He enjoys the company of others. From this he/she derives the satisfaction from affiliation, belongingness, intimacy, love and closeness with others. These needs can be met by acquiring skills, intelligence and constant effort and practice. The WHO defines health as follows: "Health is the state of complete physical, mental and social well-being", and not merely the absence of disease and infirmity. Mahatma Gandhi defines health by saying that "a healthy man has body ease".

Major Concept of Health

Everyone must attain such a status that he/she is very close to one's potential at one's highest level. This status here means physical, mental and social being.

Minor Concepts of Health

(a) All organic systems—respiratory circulatory, muscular, skeletol, digestive, excretory, endocrine, nervous, etc.— can be developed only by sustained vigorous physical activities.

(b) An adequate nutrition—a balanced diet – must be taken.

(c) Enough rest and relaxation is necessary for repair of wear and tear, growth and development of all systems.

(d) Given enough nutrition, exercise or activities and rest, and being free from infectious diseases, the major factor to attain health is human relationship—social skills.

PHYSICAL EDUCATION

Major Concept

Physical education is one of the phases of education its medium being movement and activities.

Explanation of the Concept

The aims of physical education are the same as any branch of education. Learning in physical education is not dictated and controlled by textbooks. It is influenced by the child's purposes and values. Boys and girls want strength, skill, grace and fun, to make friends, to be a member of a team, to be accepted by some or many. A physical education programme can offer experience in planning, self-discovery, self-direction and thinking, social skills, besides, ability to play games and participate in athletics.

Objectives

(i) To develop motor ability strength, speed coordination, endurance, flexibility, reaction time and agility.

(ii) To develop social skills such as
  - (a) taking turn
  - (b) contribute one's best to the team
  - (c) not to let the team-mate down
  - (d) understand, interpret, obey and abide by the rules
  - (e) accept the decision of umpire/referee gracefully
  - (f) take defeat and victory in a stride. Grace in defeat and humble in victory.

Induction Questions

1. What activities develop specifically the motor factors, viz. strength, speed, endurance, coordination, flexibility, reaction time and agility?

2. How to make activities enjoyable?
3. How to make students aware of their ability to use their hands to catch a ball?
4. How can students be made to obey the rules, say "outside" in volleyball or a "good service" in badminton?

These movements are as a result of personal experimentation, motor perception, and motor ability and skills.

Sub-concepts

(a) Movements from one place to another are called locomotion.

(b) Movements without gaining ground are axial movements–stretching one's arms, turning one's head, etc.

(c) Movements involving both the above but to exert force or to muffle force, for example, throwing a ball or catching a ball, pushing a chair or lifting a book, climbing etc.

These three movements have to be later learnt in both the personal space and the general space. Further, these movements have to be fused with Space Time Perception rules and in rhythm. The game of volleyball is space bound with lines and rules to manipulate the ball within the space — own court and into the opponent's court.

Delineation of the Concept into Sub-concepts

A movement, for example, walking by a child of 6 years is indeed a remarkable development of the child. The young child gradually grows and develops—first by random movements and later by specific movements. In this process, he develops strength and ability—strength to move his legs, while lying on his back and to reach an obstacle, say the side of the cradle. He senses the edge of the cradle and later pushes it and moves up. Later the child learns to sit, overcomes the forces of gravity; learns to pull and push his muscles in a coordinated way to hold its body upright. Further, the child learns to reduce the base to stand on feet to balance its whole body, and later learns to move forward.

Methods

These three movements have to be taught in terms of 'body awareness' and 'discovering their own body'. The teacher has to help children discover the structure and facility in the use of their body efficiently using dimensions such as space, time, direction, levels, effort, sequence, pathway and body shape. At every stage the teacher must help children to form a mental image and a concept of their own body. This 'body image' will contribute to the development of self-image, self-esteem and a self-concept.

The teacher must preserve the informal atmosphere of physical education classes. There shall be no direction or dictation by the teacher or the leaders. The counting of numbers and doing callisthenies must be done away with. Thinking must be done by the students themselves, and students must be given a greater responsibility in choosing and conducting the activities. If the teacher does so, the students will be doing teacher's lessons. If the students choose, they will be doing their own lessons and so they will discover more.

Competition must be used selectively. Strong competitions could do more damage on the young minds.

Teachers must not make comments on any child. A really professional teacher never makes any casual remark on any child. Remarks destroy children's self-concept. The teacher's role is to prevent injury and to heel and not injure a child. Positive encouragement plays an important role in helping children.

Issues/Dimensions in Relation to Concepts and Sub-concepts

Choice of activities and making them vigorous and progressively vigorous, rests with the teacher. It is easy to feel so much of an activity is enough. The teacher for reasons best known to him/her plays safe by giving less activity. Progressively this 'less' becomes a habit and causes ill or underdevelopment of children.

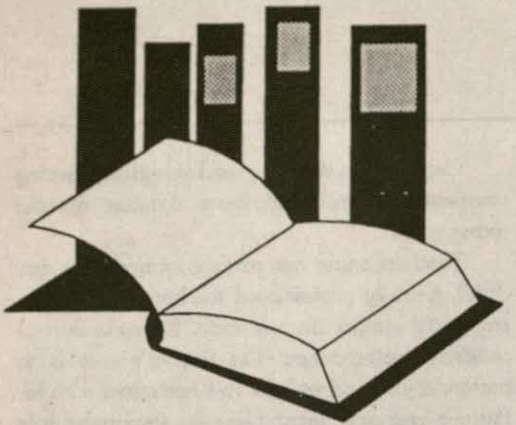
Further, the lack of facilities such as playgrounds and equipment must not be the factors to prevent activities for the students. The resourcefulness of the teacher can overcome this problem.

The time-table or scheduling of activities must not cause concern to the teacher while it is ideal to arrange activities in cool hours during hot months and warm hours during cold months.

Apart from physical activities, the teacher should impart knowledge about the need of nutritious food. The children should be taught about the food which is good for their health. If needed the parents should also be made aware as to which food is nutritious for their children.

Audio-visual

By sheer enthusiasm the teacher can collect visual aids and use them to stimulate a better learning. He/she should contact and invite local professionals and expertise and bring their expertise to the classroom.



Activities for Teachers

(a) How a vigorous activity, say running one kilometre a day; for one month, changes him/her?

(b) What food groups are needed for a normal person–(a) adult, (b) child of 6-7 years? How to determine the quantity needed for them?

(c) What is sleep? What happens in sleep to our organic systems?

(d) How much sleep and its frequency is necessary for a child of 6-7 years?

(e) How is rest different from sleep? Is rest necessary? When and how to rest?

Worksheets

A. (a) Describe the activity/activities that you will give to the students.

(b) Write the content of every activity mentioned above.

(c) How would you start or introduce the topic/activity?

(d) How would you correct or rectify students, if they (some) are not performing well? What would you do, if they are performing well?

(e) How would you reinforce what has been learnt by the students?

(f) Taking stock based on the above five questions, how would you organise the play areas and supplies of equipment?

(g) How would you end the class?

(h) How would you evaluate yourself?

B. (a) Do you consider that some of the sub-concepts in the areas of health and physical education are not relevant to the main concept? Give reasons.

(b) Are health education and physical education related? How?

(c) If you think you are not good at any activity or game how would you demonstrate or conduct the activity?

Would you give up that you can't teach?

(d) Can you invent a game yourself? Invent a few. What is the main outcome of that game that you would emphasize?

(e) Will you encourage and accept any student-invented game? How would you want that game to be introduced to the class?

(f) Do you think that the strategies or even concepts suggested here can be improved? If so write your recommendations/suggestions.

WRITERS AND VETTING PERSONS

Dr (Smt.) Daljit Gupta
Reader
Department of Pre-School and
Elementary Education
NCERT, New Delhi

Dr Ved Prakash
Prof. & Head
Navodaya Vidyalaya Cell
NCERT, New Delhi

Dr S. D. Roka
Retd. Prof.
Department of Pre-School and Elementary Education
NCERT, New Delhi

Dr V. P. Garg
Reader
Department of Teacher
Education and Special Education
NCERT, New Delhi

Dr Venita Kaul
Professor
Department of Pre-School and Elementary Education
NCERT, New Delhi

Dr Rajalakshmi Murlidharan
Retd. Prof. & Head
Department of Pre-School and Elementary Education
NCERT, New Delhi

Dr (Smt.) Sandhya Paranjpe
Sr. Lecturer
Department of Teacher
Education and Special Education
NCERT, New Delhi

Dr Usha Nayar
Prof. & Head
Department of Women's Studies
NCERT, New Delhi

Dr Janak Duggal
Reader
Department of Women's Studies
NCERT, New Delhi

Dr (Smt.) Kiran Devendra
Reader
Department of Women's Studies
NCERT, New Delhi

Dr Sushma S. Jaireth
Lecturer
Department of Women's Studies
NCERT, New Delhi

Dr Raj Rani
Lecturer
Department of Women's Studies
NCERT, New Delhi

Dr Gauri Srivastava
Lecturer
Department of Women's Studies
NCERT, New Delhi

Dr K. M. Gupta
Reader
Department of Teacher
Education and Special Education
NCERT, New Delhi

Prof. B. R. Goyal
Regional Institute of Education
Bhopal

Shri P. K. Chakravorty
Subject Specialist (English)
State Institute of Education, Changlang 792 120
Arunachal Pradesh

Dr (Smt.) Ravikanta Chopra
Reader
Department of Teacher Education
and Special Education
NCERT, New Delhi

Dr (Smt.) Savita Verma
Sr. Lecturer
Department of Pre-School and
Elementary Education
NCERT, New Delhi

Dr (Smt.) Brinda Ramesh
Sr. Lecturer
Department of Education in Science and Humanities
NCERT, New Delhi

Dr V. P. Gupta
Reader
Department of Pre-School and Elementary Education
NCERT, New Delhi

Dr I. K. Bansal
Reader
Department of Pre-School and Elementary Education
NCERT, New Delhi

Dr N. M Rao
Reader
Regional Institute of Education, Mysore

Dr K. L. Arya
Reader
Regional Institute of Education, Ajmer

Dr K. Doraiswami
Reader
Regional Institute of Education, Mysore

Dr R. C. Upadhyaya
Sr. Lecturer
Regional Institute of Education
Bhopal

Smt. S. Sharda
Teacher
Demonstration Multi purpose School,
Regional Institute of Education
Mysore

Dr (Smt.) Shukla Bhattacharya
Reader
Department of Pre-School and Elementary Education
NCERT, New Delhi

Dr B. K. Sharma
Department of Education in
Science and Mathematics
NCERT, New Delhi

Dr S. C. Jain
Reader
Regional Institute of Education, Ajmer

Prof. S. B. Singh
Regional Institute of Education, Ajmer

Prof S. K. Paradkar
Reader,
Regional Institute of Education, Ajmer

Dr P. R. Rao
Reader
Regional Institute of Education

Shri R. K. Chopra
Ex-Reader
NCERT, New Delhi
C-2-B, 80-C, Janak Puri
New Delhi 110 058

Dr D. D. Yadav
Reader
Department of Teacher
Education and Special Education
NCERT, New Delhi

Shri P. A. Char
Ex-Reader
Regional Institute of Education, Mysore
143/1, College Road
Mysore 570 024

WRITERS AND VETTING PERSONS

The following participants attended the workshop for the development of In-service Education Package for Primary School Teachers held at the NCERT, New Delhi from 14 to 19 June 1993.

RCE, Mysore

1. Dr K. Doraiswami
2. Shri K. P. Sankaran
3. Shri P. R. Rao
4. Ms Sharda (DMS)
5. Dr N. M. Rao

RCE, Ajmer

6. Dr K. L. Arya
7. Dr S. C. Jain
8. Dr S. K. Paradkar
9. Prof. S. B. Singh

RCE, Bhopal

10. Dr I. D. Gupta
11. Dr B. S. Upadhyaya
12. Prof. B. R. Goyal

RCE, Bhubaneswar

13. Dr S. C. Sahoo

Resource Person

14. Prof. S. N. Tripathi
    Retired Professor in Education
    RIE, Bhopal

Department of Pre-School and Elementary Education

15. Dr B. K. Sharma
    (Presently in the DESM)
16. Dr Savita Verma
17. Dr I. K. Bansal
18. Dr V. P. Gupta

Department of Women's Studies

19. Dr Kiran Devendra

Central Institute of Educational Technology

20. Dr S. P. Banyal

Department of Teacher Education and Special Education

21. Dr N. K. Jangira
    Ex-Head of the Department
22. Dr S. Paranjpe
23. Dr (Mrs) R. K. Chopra
24. Mrs Mamta Kapoor (JPF)
25. Ms T.V.S.D. Bhavani (JPF)
26. Dr V. P. Garg
    Convenor

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING